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NOVEMBER, 1926

PUBLISHED MONTHLY BY AMERICAN MEDICAL ASSOCIATION, 535 NORTH DEARBORN STREET, CHICAGO, ILLINOIS. ANNUAL SUBSCRIPTION, $8.00

Entered as Second-Class Matter, October 30, 1917, at the Postoffice at Chicago, Illinois, Under Act of Congress of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 29, 1918.

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Archives of Dermatology and Syphilology

VOLUME 14 NOVEMBER, 1926 NUMBER 5

CALCIFICATION OF THE SKIN, INCLUDING THE EPIDERM, IN CONNECTION WITH EXTENSIVE BONE RESORPTION *

FRED D. WEIDMAN, M.D.
AND
LOREN W. SHAFFER, M.D.
PHILADELPHIA

The occurrence of calcium deposits in the skin, while not frequent, is such a spectacular phenomenon that it has received a full measure of attention in the literature, and its mention does not arouse special curiosity. In the face of all this, and in extenuation of this paper, we submit that our case was, as far as we could find, unique in that the epiderm and other epithelial structures were heavily calcified and that it was unusual in the following respects: 1. Many of the appendages, particularly neural ones, were affected. 2. It occurred apart from any recognizable retrogressive changes, preceding or otherwise, and therefore may probably be classed among the extremely rare examples of metastic calcification—the "kalkmetastase" of the Germans. If this is true, the skin would constitute another and new approach to the diagnosis of morbid internal states, for the histologic examination of the skin gave the first clue to such a disturbance in our patient.

We had two experiences with this case, the first limited to an amputated hand, and the second a very satisfactory one in the hospital. Since there was an interval of a year between the two during which readjustments of calcium balance and other changes might have taken place, we will record our experiences in such a form as to enable the reader to make due allowances for this hiatus as he may see fit.

* From the Laboratory of Dermatological Research and the Department of Dermatology and Syphilology, University of Pennsylvania, Philadelphia.

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* Even though we could not establish the presence of calcium in this patient's skin, the foregoing designation may be permitted in such a place as a title because it facilitates indexing and accessibility in the literature and because it is compatible in a broad general way with mineral processes concerning the bones. "Mineralization" would be more proper than calcification under the circumstances.

FIRST EXPERIENCE

Dr. W. S. F. Addison presented us with four fingers and part of a palm which had come from a surgical operation and which had in turn been presented to him from the laboratory of the Philadelphia General Hospital. The material had been fixed and preserved for more than a year in Bouin's solution before it reached us.

The Hand.—The skin was so wrinkled as the result of long preservation that conclusions as to its thickness and consistency were unjustified. There were, however, no ulcerative or other outstanding gross dermal changes in the material submitted. We could not make out any sclerodermic or calcific changes in the skin with the naked eye or in roentgenograms of skin dissected from the hand. The bones were so deficient in lime salts that they cut readily with the knife

Fig. 1.—Hand before amputation.

and did not require decalcification preliminary to histologic sectioning. The softness was not referable solely to the prolonged immersion in formaldehyde (which can of itself produce decalcification) but had been commented on when the specimen was first received in the laboratory of first source.

Clinical History.—This was fragmentary. It was that of an arteriosclerotic old man whose hand had been amputated for osteomyelitis. Roentgenograms showed rarefaction of bone in the fingers as well as at the site of the suppuration. The blood pressure was 170 systolic and 90 diastolic on one occasion, and 126 systolic and 64 diastolic on another. The Wassermann was negative with both cholesterin and Noguchi antigens. The urinalysis was essentially negative.

Skin was selected from the following positions for microscopic study: under the nail, the tip of the finger (palmer surface), over the second knuckle, over the third knuckle, the palm and the hairy skin over the back of one of the fingers. An extensor tendon of the hand and the head of a metacarpal bone were also subjected to histologic processes.

Microscopic Description.—(Hematoxylin and eosin staining unless otherwise noted). The following is a composite description of skin from six different positions. The variations from this general picture as they occurred in different blocks of tissue will be discussed in a separate and concluding paragraph.

The stratum corneum was of normal thickness; its cells appeared normal except for a little swelling which might be the expression of maceration (wet dressings), and no nuclei were visible in it.

The stratum granulosum consisted of three or four layers of cells and was particularly conspicuous by reason of its deep blue color (in general), which far surpassed that of the adjacent layers. This blue color was not due to the

Fig. 2.—Bird's eye view of skin, showing distribution of calcification (in black). It is exhibited here in the stratum granulosum, stratum malphigii, collagen adjacent to a blood vessel (at left of illustration), nerve trunks, sweat ducts and pacinian corpuscles.

keratohyaline granules which are usually responsible for it, nor yet to nuclear material, for while most of the nuclei were of the elongated, solid character which is normal in this layer, those which were swollen were not unduly rich in chromatin. But the cytoplasm contained an indefinable blue substance of the finest granular quality, and not only were the granules blue, but the cytoplasmic substance itself (which had a densely compacted, condensed appearance) took more of the basic dye than normal. Practically every cell of this layer was thus affected to greater or less degree, the result being that the whole layer stood out

conspicuously as a blue stratum extending continuously throughout the entire section. Along some stretches the cells were swollen, almost polygonal in form, and their cytoplasms were fused. Here the nuclei were spherical, and not of degenerate type, for the individual clumps of chromatin could be made out distinctly. Here, too, the granular layer was much thicker than elsewhere. In no place were the coarser, keratohyaline granules seen in normal abundance; only on careful search could any be found.

The prickle cell layer contrasted strongly with its neighbors because it was so free from this "bluing" process. Only at wide intervals did a solitary cell stand out from the others by reason of its swollen and blue cytoplasm; such a cell was sharply outlined, and its nucleus was spherical and rich in chromatin

Fig. 3.—Distribution of calcification in the epiderm. The latter has become separated from the corium by accumulation of fluid—this space is not artefact.

clumps. The layer as a whole was thin. It consisted of upward of a dozen layers of cells which became reduced to but three or four in places. Most of the cells were abnormal in one or another respect; along some stretches they were flattened and compressed and resembled cells of the granular layer (minus the granules). There were all transitions at different places from this to normal. On the whole, the idea was conveyed that some compressing force was operating; however, the degree of this pressure effect did not run parallel with the blue granular process. Indeed, the largest quantities of blue material were seen in those rete cells which underlaid the thickest parts of the epiderm.

In the rete the theme followed that of the immediately overlying prickle layer. Rete cells were flattened along the same stretches where the overlying

prickle cells were flattened; but when they were of normal size they frequently exhibited blue granular features similar to those described in the granular layer. Thus, the nucleus remained normal in appearance, and the cytoplasm was swollen by the adventitious blue granular processes. There were these differences, however, from the granular layer: First, the general masses of bluing were larger and their form generally elongate—they affected the lower strata of prickle and rete cells and thus came either to affect solidly the narrower examples of interpapillary pegs, or to extend along the basement membrane elsewhere. Second, the quantities of blue material were greater in relation to the individual cells; this suggested that a vital factor was at the bottom of the process rather than a simple passive one. Third, the blue material did not

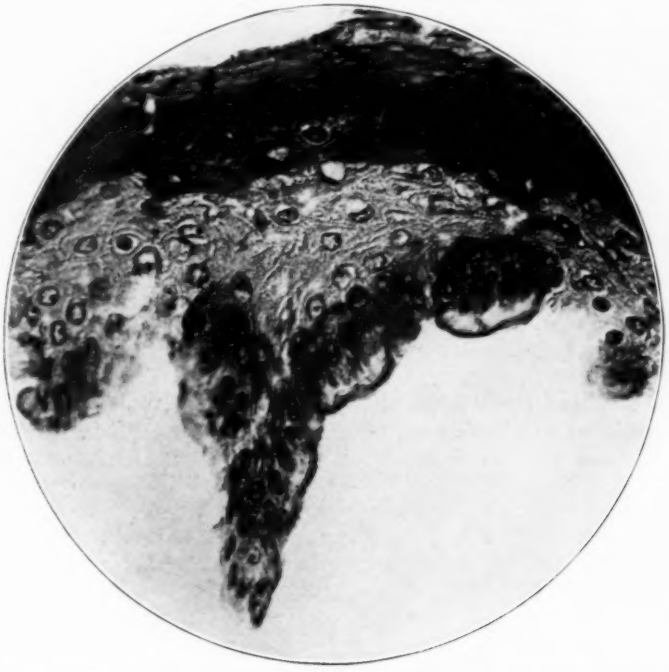


Fig. 4.—Details of calcification in the epiderm. The affected parts are not degenerate, the nuclei staining distinctly. The appearance of incrustation in the rete cells at the right hand side of the illustration should be noted; the paler, more hyaloid lower margin of the clump was purely calcareous. It contained no cytoplasmic granules.

appear exclusively *within* the cytoplasm of the cell to which it was related; thus, the cytoplasm frequently stained pink, was comparatively hyaloid, and could be seen through an intervening film of blue material. The latter thus came to form an envelop around a cell, or, for that matter, around a chain or mass of cells. The effect was that of incrustation; the interpretation was that the blue substance had been laid down in intercellular lymphatic spaces as well as within the cells; that is, we were dealing with an infiltration rather than a degeneration, and it was both intercellular and intracellular.

The effect of these changes on the form of the interpapillary pegs was not great. They were somewhat elongated, and but slightly disturbed in shape.

The positions in the corium in which blue deposits occurred, arranged according to classes of tissue affected, were as follows:

a. Of Connective Tissue Relationship: Subepidermal vesicle contents, within nuclei of the collagen bundles, in and around foci of lymphocytic infiltration (including those of granulomas), within lumina of blood vessels, in the lining endothelial cells of capillaries, arteries and veins.

b. Muscular: Walls of arteries.

c. Nervous: Nerve trunks and pacinian corpuscles.

d. Epithelium: Sweat ducts and coil glands.

That is, all of the histologic classes of tissue were affected. We will now pass to the detailed description of each of these and of the corium in general.

Narrower and broader spaces occurred at intervals between the rete cells and the basement membrane; these represented vesicles, for they contained a delicately pink, hyaloid precipitate of serum albumin or globulin. The vesicles were so small that they were probably not distinguishable clinically. The particularly interesting feature to us was the presence of numerous coarse, blue granules within them—most numerous at positions adjacent to rete cells. Some of the granules were with difficulty distinguishable from large cocci. Often, in addition, the incrustations heretofore described in the epiderm extended directly into the spaces; and, furthermore, certain hyaloid blue particles were associated of a form which suggested that they were derivatives of fragmented or tangentially sectioned incrustations of cells at a higher or lower level than the section studied. We may be certain, at least, of this much, that the vesicles contained the same kind of blue substance, conceivably in solution, that the epidermal cells did, and that it appeared in greatest quantity in positions which were under the immediate influence of rete cells.

The general collagenous tissue of the corium was, for the most part, of normal density and thickness; in such places the nuclei were moderately swollen and hyperplastic and associated with sparing collections of lymphocytes. Sudan III sections brought out that the plasma cells and "Mastzellen" which were so sparingly intermixed with the lymphocytes were heavily laden with fat. Sclerodermic changes were absent. Alternating with these more normal parts there were expansive regions of edema, and over these the skin surface was elevated into folds. Here the collagen bundles were widely separated as in edema. The blue infiltrates which were described above in the epiderm were more marked above such places than over the denser ones.

At various levels in the collagen, foci containing blue infiltrative granules occurred. They were always in relation to nuclei, the larger masses being in connection with the denser foci of round cell infiltration. The one illustrated herewith occurred in a localized infiltration of lymphocytes such as occurs so commonly in the perivascular lymphatics in various subacute dermatoses. On finer analysis, one could detect the same general order of changes as was described in the epiderm, namely, the accumulation of blue granular or hyaloid material disposed around the nucleus of a cell like an incrustation. By fusion of these spheroids, either rounded or elongated trabecular agglomerations were formed. Such masses measured up to 1 mm. in diameter, large enough to be demonstrated subsequently in "in toto" preparations.

Arteries showed a markedly fibrosed intima, but the muscularis was well preserved. In the latter there were numerous and expansive deposits of blue and hyaloid material in sheets and spherules; but a genetic connection with cells

could not be established here in the way that it was elsewhere. The infiltrate appeared to be deposited within a perfectly normal muscular substance. There was not the slightest trace of fibrosis, degeneration or cell infiltration; the blue deposits appeared to have been simply laid down in situ. There was no disturbance of tinctorial or other qualities in the elastic or other fibers anywhere in the arteries.

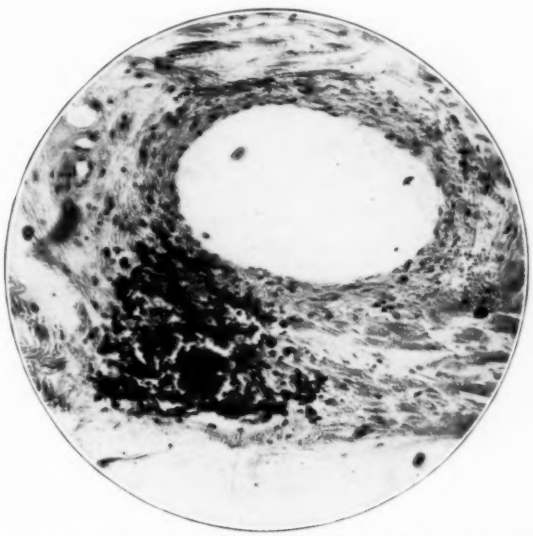


Fig. 5.—Focus of calcification adjacent to a blood vessel.

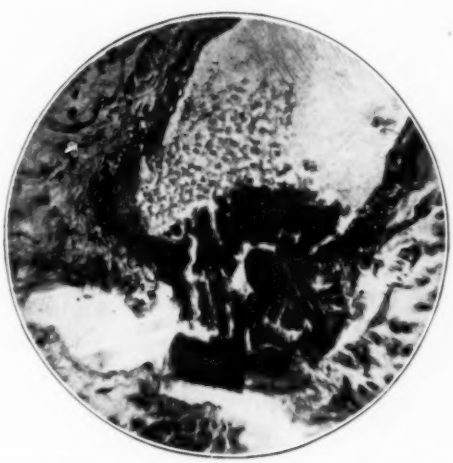


Fig. 6.—Calcareous focus occurring at wall of blood vessel and extending into its lumen.

The lining cells of some of the capillaries in the papillae and those of veins farther down occasionally showed the infiltrative effect. Diffuse bluing of the cytoplasm and a few fine blue granules were the only changes noted in the capillaries, but in several of the larger vessels there were additional ones.

Thus, in the arteries the erythrocytes which were in contact with infiltrated endothelial cells also stained blue! This staining effect took place in a circumscribed fashion, suggesting a thrombus, but there were no associated fibrinous or special degenerative features to confirm this idea. Except for color, these cells were not different from ones elsewhere in the lumen.

There were many sweat glands throughout the sections. The secretory portions, while they did not excite the attention that the ductal parts did, were nevertheless abnormal. Although they were of full size, their lumina were narrowed or obliterated by reason of the changes in their lining cells. These were markedly swollen, highly vacuolated and their outlines so obscure that they

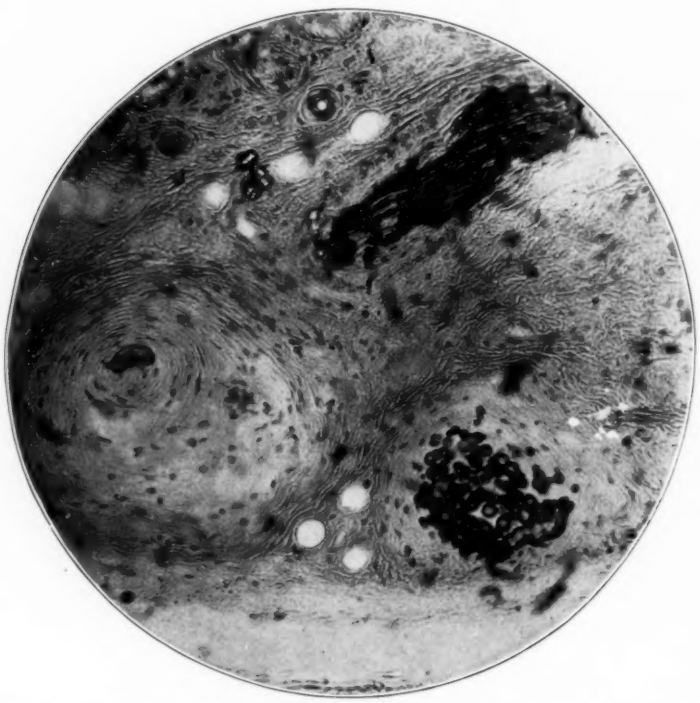


Fig. 7.—Details of calcification; in nerve trunk above and in two pacinian corpuscles below.

appeared fused. Indeed, at times, the vacuoles and cytoplasm of adjacent cells coalesced to the degree that a solid ring of cytoplasm appeared around the lumen, the ring consisting of finer and coarser pink granules or even hyaloid spherules, separated to greater or less degree by smaller and larger vacuoles as well as diffuse spaces. Most of the latter probably represented diffuse fluid collections during life, for in sudan III preparations they did not stain red. The nuclei were displaced in all directions (effect of crowding by vacuoles); most of them were pyknotic or showed karyorrhexis. There were no inflammatory cell infiltrates in relation to the sweat apparatus anywhere.

The blue deposits in the coils were inconspicuous in most sections, but in the skin from the second knuckle almost every tubule showed some grade of infiltration. Sometimes it concerned only the nucleus, in which case that structure

was of full size or a little swollen, unusually sharply outlined, and so densely and uniformly blue-black that no chromatin granules could be defined. This did not occur in every cell; it affected, perhaps, one in ten. The nuclear infiltration had no special predilection for sweat cells showing the blue cytoplasmic infiltration to be next described. Indeed, many cells with high-grade cytoplasmic infiltration had nuclei which were morphologically normal. But in numerous other tubules the cytoplasms were diffusely blue in the same way that those of the epiderm were, and while the nuclei of such cells at times appeared normal, at other times they were solid, blue-black and perhaps a little swollen. These

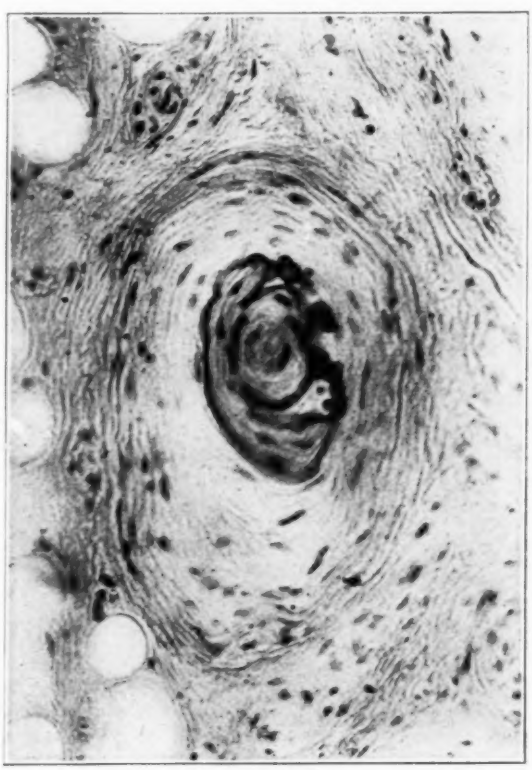


Fig. 8.—Calcification of pacinian corpuscle.

points are important in relationship to the source of the calcareous material—whether nuclear or cytoplasmic agencies determined its deposition. Generally the cells were affected in groups, but occasionally the entire lining of a tube was involved. Some cells were desquamated and partly disintegrated, but this was exceptional.

In sections stained by sudan III, numerous minute and larger fat globules were demonstrated, both in the lumen of the tube and in the cytoplasm, and in those treated with silver nitrate (von Kossa's method, so called, for demonstrating calcification) there were black granules in the same position. None of these was demonstrated in the nuclei.

Fig. 9.—Calcification of sweat ducts. The secretory coils quite escaped the calcification in this block of tissue.

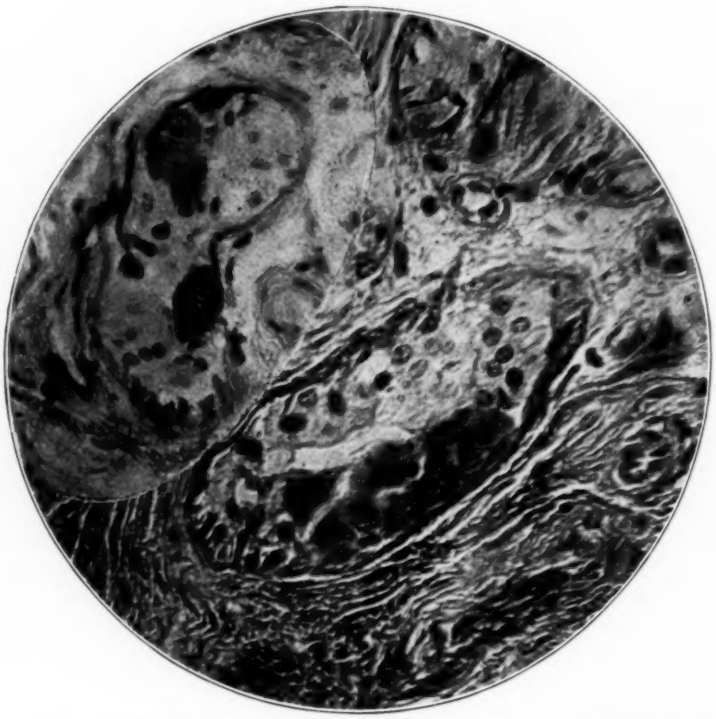


Fig. 10.—Calcification of cells of coil glands. (The ovoid insert is from a different section.) This occurred in but one of the many blocks of tissue examined.

In the case of the ducts, the story omits the vacuolar features described above in the coils, and features the bluing process. The ducts, in almost every section, were most conspicuous because along the entire course from epiderm to coiled tube there was a strong blue cast in the lumenal (but not in the basal) layer of cells. This was due both to a finely granular blue substance and to a diffuse, hyaloid, blue material. At times the deposits were particularly heavy; under these circumstances the cells were swollen, and the same incrustment effect was given as was described in connection with the epiderm. Even where this was the case, the parietal layer of cells distal to the lumen escaped the infiltration—it was always severely free from infiltration—and we had the effect of a dense, pipe-stem-like cylinder enclosed by a mantle of paler, looser, softer material. It was remarkable how well preserved the nuclei of both layers were in the face of such notable cytoplasmic changes.

By sudan III staining the same order of infiltrative changes was brought out, and the same localities were found involved except that the pathologic material stained red instead of blue; in addition it was brought out that many

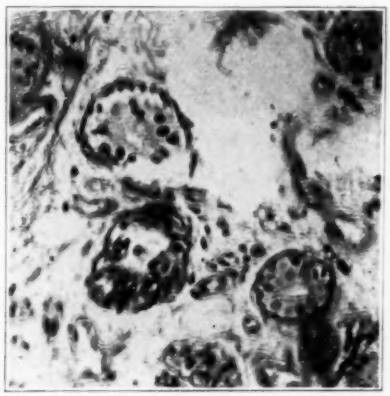


Fig. 11.—Sweat gland showing certain nuclei strongly affected by the calcific process, while the cytoplasm is not.

nuclei contained red globules—in frequent instances numerous and large. Occasionally one found in addition a goodly accumulation of blue (and red by sudan III) staining granules or lumpy strands within the lumen, genuine casts.

In places where the tubes were sectioned in the favorable plane one could make out how strongly the infiltration tended to be restricted to the ducts; thus the junction line of secretory and collecting tubes was sharply and precisely indicated by the density and blueness of cells on one side and the absence of these qualities on the other.

The sheaths, nerve fibrils and neurilemma nuclei appeared normal. The only abnormal features consisted in blue deposits of the same order as those already described elsewhere in the skin. They occurred within the nerve trunk itself in the form of smaller and larger spherules, some of which agglomerated into elongated lumpy masses which followed the general trend of the nerve trunk. On closer examination we could often discover a nucleus within one of the spherules, i. e., the same incrustment phenomena occurred here as in the epiderm and sweat ducts. The myelin sheaths showed no more of a predilection for this infiltration than did the endoneurium in these hematoxylin and eosin sections.

But in sudan III sections, fine red granules could be found extending along lengthy stretches even where there was no calcic infiltration; and they were also demonstrable within the calcified regions. Closer examination showed that they lay within the myelin sheaths of medullated nerves.

The pacinian corpuscles did not exhibit as extensive involvement as the nerve trunks. The part most often affected was the central bulb at the region where the nerve trunks entered, but the concentric lamellae were also involved. They were affected in much the same way as the trunks, i. e., in some there were blue spheroids aggregated in the central half of the corpuscle, and in others the material took the form of lamellae which ran parallel to the normal concentric lamellae, and more or less completely encircled the corpuscle. On search, one could discover a nidus of lymphocyte-like cells within such a blue mass and could understand how the blue incrustment might have occurred around it. Usually, however, the deposits occurred independently of such a nidus. In

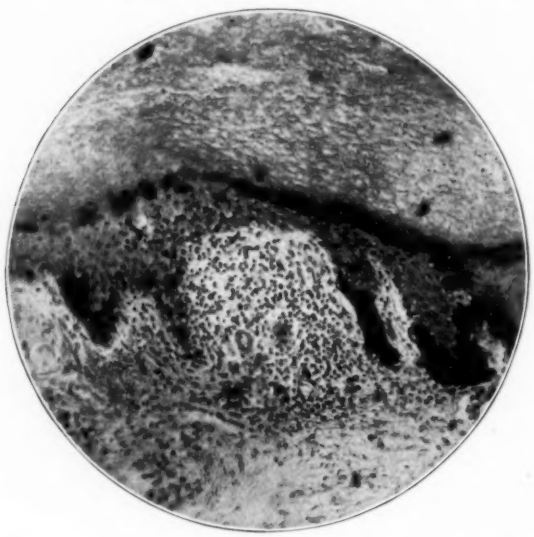


Fig. 12.—A tubercle. Tubercles were also present in the deeper parts of the corium.

sudan III sections, the nuclei of calcified parts were found to contain red granules; and there were large numbers of red globules intermixed with the calcic areas already described.

The sebaceous glands were present only in sections from the back of the hand. They appeared normal. No bluing effects could be discovered in them.

Tubercles were found in almost every section and from every part of the hand examined. They lay at all levels of the skin; some were immediately under the basement membrane of the epiderm and others were adjacent to sweat glands deep in the corium. They were always small, miliary, never conglomerate and never showed central degenerate changes. They generally consisted of a nidus of closely packed lymphocytes (occasionally the lymphocytes were few) which surrounded a smaller or larger Langhans giant cell. Foreign bodies (vegetable spines) could not be discovered in the interior of any. A most remarkable thing about the giant cells was the diffuse blue color which some of them took,

either in part or in whole, i. e., they were also subject to the infiltrative process. There were endothelioid cells in the centers of some of the larger granulomas; but on the whole they were inconspicuous.

Around one of the largest granulomas there was a dense, calcareous infiltrate; it appeared in the form of blue spheroids which sometimes encased a lymphocyte as in the infiltrates previously described.

Variations of the Calcareous Infiltrate in Different Parts of the Hand.—The foregoing description represents maximum findings, i. e., the sum total derived from scores of sections. We wish next to record the extent to which and wherein different sections varied; this will permit comparison with future cases in which the material may be more limited than ours, and may have a bearing on the order of involvement of the different infiltrated parts. We will pass from the least to the most markedly infiltrated parts of the hand.

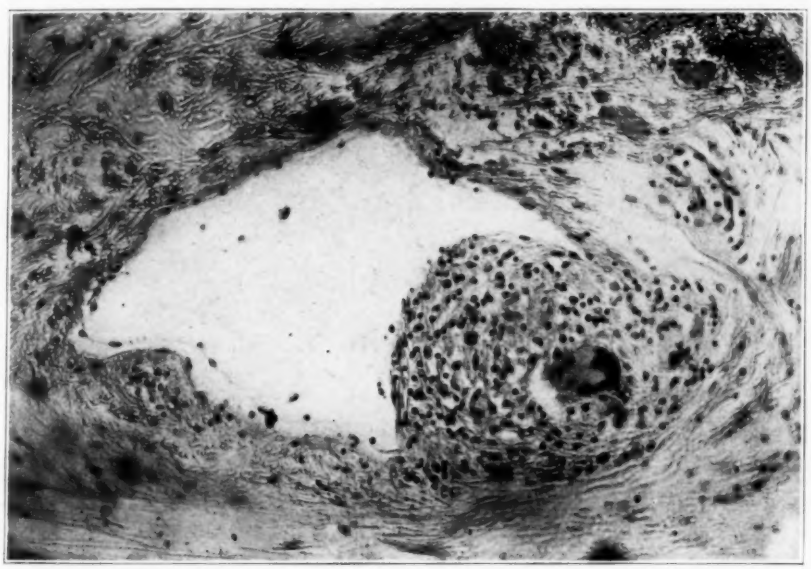


Fig. 13.—A tubercle within a vein.

Over the first knuckle the skin showed no calcification anywhere in some sections, and only of the stratum granulosum in others.

In some sections from the palm, we found only the stratum granulosum affected. It appeared as a line of deep and diffusely blue hyaloid cells intermediate between the coarsely granular ones below and the clearer ones of an imperfectly developed stratum lucidum above. The nucleus was invisible or solid and shrunken. We may only questionably regard the stratum granulosum as the original site of the infiltration, for at deeper positions in the same block of tissue the infiltrate was subsequently found in several other positions also. We must concede, however, that *whenever any part of the skin was affected in any of our sections, the granular layer was always affected also.* At the side of the finger, and over the knuckles, calcification was found in all of the positions above described, except for involvement of the (secretory) sweat cells. Involvement of the latter class of cells was conspicuous only over the second knuckle.

We would not intimate that these variations can have any practical significance in reference to these special localities; we simply state the facts.

Elastic tissue (Weigert's stain) was increased only in sections from a hairy part of the skin over the back of a finger; in such sections, those portions of the epiderm and other structures which were regarded as calcific did not give the elastic tissue reaction. This disposed of any suspicion that the blue material may have been elacinous, absorbed from disintegrating elastic tissue in the corium.

Van Gieson's staining brought out no additional data. The infiltrative substance took the same tint as the nuclei, brown.

The tendon appeared normal.

Fig. 14.—End of metacarpal bone. Evidence of demineralization. The red marrow was almost entirely replaced by fatty. There is extreme attenuation of the bony trabeculae as well as of the bone cortex, and the organic matrix is properly calcified only in the bone cortex at the left hand side of the illustration.

The surrounding soft parts of the bone (end of metacarpal bone) were edematous and diffusely infiltrated with small numbers of lymphocytes and polymorphonuclears, but the changes were far removed from the extreme suppurative ones which must have occurred in the hand farther up. One was at once struck by the attenuation of the mineral components of the bone. The cortex was less than 1 mm. thick at its thickest part, and consisted of but eight or ten layers of bone cells; indeed, in places there was no osseous tissue, the periosteum constituting the cortex. Bone trabeculae were likewise delicate in the extreme and widely separated by marrow that was almost exclusively fatty even in the

diaphysis immediately below the articular cartilage. Blood capillaries were rare. Marrow cells occurred only in scattered clumps, almost exclusively in positions close to the bone cortex, which prompted the suspicion that the center of the bone did not furnish adequate hemic nutrition to these cells and that a lymphatic source farther out was being drawn on. Indeed, the largest collection of marrow cells occurred adjacent to the periosteum at a place where there was no osseous tissue. Osteoblasts and osteoclasts could not be found. Calcification occurred only here and there in some of the bone trabeculae and along some stretches of the periosteum; it was best developed in the latter position. The articular cartilage was normal, except that there was no trace of bone development at its lower margin.

In short, the picture was that of extreme bone resorption, with atrophy of red marrow and replacement by fatty.

Microscopic Examination of Skin "in Toto."—We applied this method of examination in order to determine what the distribution and other features of

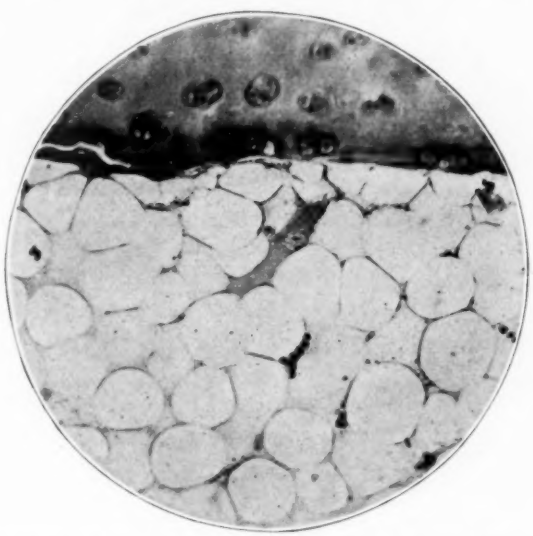


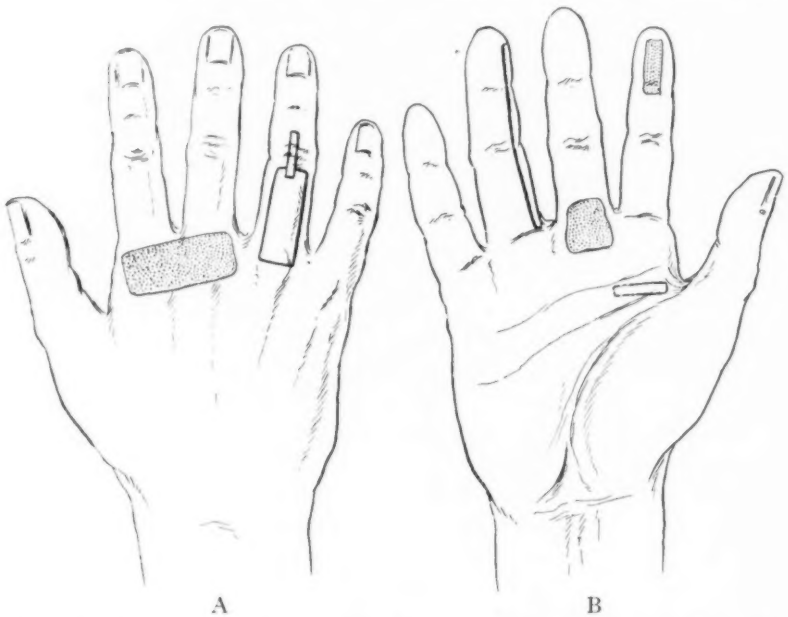
Fig. 15.—Junction of the articular cartilage and the medulla of bone. Note replacement of red marrow by fatty. Two or three clusters of marrow cells may be identified.

the calcification might be as viewed from the surface of the skin and thus perhaps compensate in a way for the shortcomings in our knowledge of the distribution as seen clinically.

A thin shaving of skin about 1 cm. square was removed with a razor from the palmar surface of a finger and examined in glycerine "in toto." Under the binobjective microscope, magnification 75 ×, the only thing that could be recognized as pertaining to the calcific process was the prominence of the sweat orifices. Using this method, we were handicapped in estimating the location of calcification because we could not distinguish between the shadows which might be the result of inequalities in the thickness of the skin and those that were the result of calcification. The sweat orifices appeared as opaque, dark brown or black punctae, and at times, where the most superficial parts of the skin were particularly transparent, the duct could be traced downward to some depth.

The most striking phenomenon, and one which was promising from the standpoint of clinical diagnosis, was the appearance of slender, cloddy, black spirals which extended upward above the surface from the sweat orifices like a slender horn. They described one or two complete turns and were obviously the continuations of the calcareous casts which we had observed within the sweat ducts in sections. They appeared only in the larger sulci, not on the summits of the landscape; presumably they had been rubbed off from the latter positions.

Another piece of skin (this was from the back of the hand) 3 by 6 cm., was cleared in toto by the wintergreen oil method of Spalteholz. In such preparations, held against a black background, one could see dead white points distributed through all levels of the corium. Some tended to follow the lines of blood vessels, and were identified (small portions of skin shaved off and examined under high powers) as the larger foci of intracollagenous calcification heretofore described in sections. They occurred in no significant groupings as



A B

Fig. 16.—Areas explored for calcification by the Spalteholz clearing method. The stippled areas contained foci of calcification, the vacant ones did not. This observation was limited to the larger accumulations of calcium in the corium; the more minute accumulations in the epiderm and other epithelial structures could not be identified by this method.

viewed from the surface of the skin. They could likewise be identified on the edges of the piece of skin as dead white, widely scattered points, and when these were scratched with a needle one experienced the gritty sensation of calcification. The more minute infiltrations, such as occurred in the sweat ducts, and those in the epiderm were not recognizable by this technic; staining in toto with weak hematoxylin and eosin followed by acid differentiation did not help.

Additional pieces of skin were examined by the Spalteholz technic, by which it was determined that the larger calcareous foci in the collagen were present on the hand, as shown in the accompanying diagrams. This suffices only to

show that such foci were not distributed universally and uniformly throughout the hand, and has no bearing on the distribution of the epidermal and sweat duct calcification.

Summarizing, at the present writing we have no way of determining to what extent the skin was affected by the calcareous infiltration at the time of operation, or what its appearance was dermatologically, and from the information which will be recorded in a later section of this paper, it appears that there is no cutaneous calcification in our patient today. We have no proof that there is such a state as a generalized cutaneous calcification, but we are satisfied that it did occur over a goodly portion of this man's hand at the time of operation.

Fig. 17.—One of the furrows of the skin as viewed through the dermatoscope (magnification 75 ×. The wavy structures are casts (doubtless calcific) which are protruding from the sweat orifices.

SECOND EXPERIENCE

One year after the first experience, the patient was secured and admitted to the University Hospital for study. Four months later he was readmitted for confirmatory tests.

Clinical History.—The patient felt perfectly well. He had had a bad attack of pneumonia (six weeks in duration) when 20 years old, which he ascribed to gases in the foundry where he worked. He had a sore throat at times, also light

attacks of rheumatism. He did not have any shortness of breath, indigestion or difficulty in micturition. The bowels were regular. He denied ever having had a stroke. He was a moderate drinker and smoker.

Physical Examination.—The patient was a decrepit old man, slow of gait and with stooped shoulders. His head was tilted to the right; there was some loss of tone in the muscles of the left side of the face, yet the wrinkles were of about the same depth on the two sides during laughing, etc. He was hard of hearing. The right hand and most of the forearm were missing. The amputation stump was well covered and perfectly healed. All the teeth were missing except five snags. The tongue was slightly furred. He was definitely emphysematous.

Except on the forehead, neck and back of the hands, the skin in general was decidedly not of the wrinkly type—there was a goodly amount of subcutaneous tissue. One recognized senile qualities only on pinching up folds; then one could appreciate a certain grade of satiny or tissue-paper-like features. On the whole, it was not atrophic as is commonly seen at 71. There were practically no pigmentary moles and but few white ones. The skin was not excessively dry; nor was it greasy, yet there were certain tell-tale indications of such a tendency in the form of scattered papules over the shoulders, and large pores over the sternum. There was a cluster of comedones lateral to the left eye, yet the patient denied that he had had many pimples in earlier years. There were two or three milia on the upper lids. The hair of the scalp was thin, particularly over the dome of the head, but we could get no clear idea of the duration of baldness. The hair of the entire body was silvery white. The nose was mildly rosaceous and the cheeks, ears and neck ruddy.

Faint transverse atrophic striae extended across both knees—so faint as easily to pass unnoticed.

Blue, fine, numerous and branching telangiectases coursed over the thighs and legs and particularly over the ankles. There were no varicose veins.

The wrinkly yellow and yellowish-white features of senile elastosis were present on the forehead and neck. We regarded them at first as expressions of the calcareous process until histologic and other examinations excluded it and revealed the rôle of the elastic tissue. The dermatoscope—magnification 75 ×—was used over the forehead, neck and hand in a search for spiral casts such as were found on the amputated hand, but without success. Hematoxylin was painted on the skin in the forlorn hope of demonstrating superficial calcareous changes, but again without success. The hematoxylin served a splendid purpose, however, as an indication of the reaction of the sweat and to mark the position of the sweat duct orifices. During the earlier stages of the examination the reaction was strongly acid, but later it became alkaline. We would report in passing that some of the orifices in a given area did not exude sweat, although others were doing so freely; the heat incident to the examination induced sufficient perspiration to satisfy us that there was not an absolute suppression, at least of the watery constituents.

We also tried to demonstrate calcification in deep scrapings from the back of the patient's hand by staining with hematoxylin and eosin. This procedure will not be available in any case, however, because we found that the scrapings from normal controls yielded clumps of cells whose blue qualities were indistinguishable from those of calcified ones as seen in sections. It was necessary for us to see the calcified cells in situ in the epiderm and compare them with noncalcified ones to identify calcification.

The eyes (examined by Dr. A. G. Fewell) were normal except for marked sclerosis of the retinal vessels and a few senile opacities of the lens. The

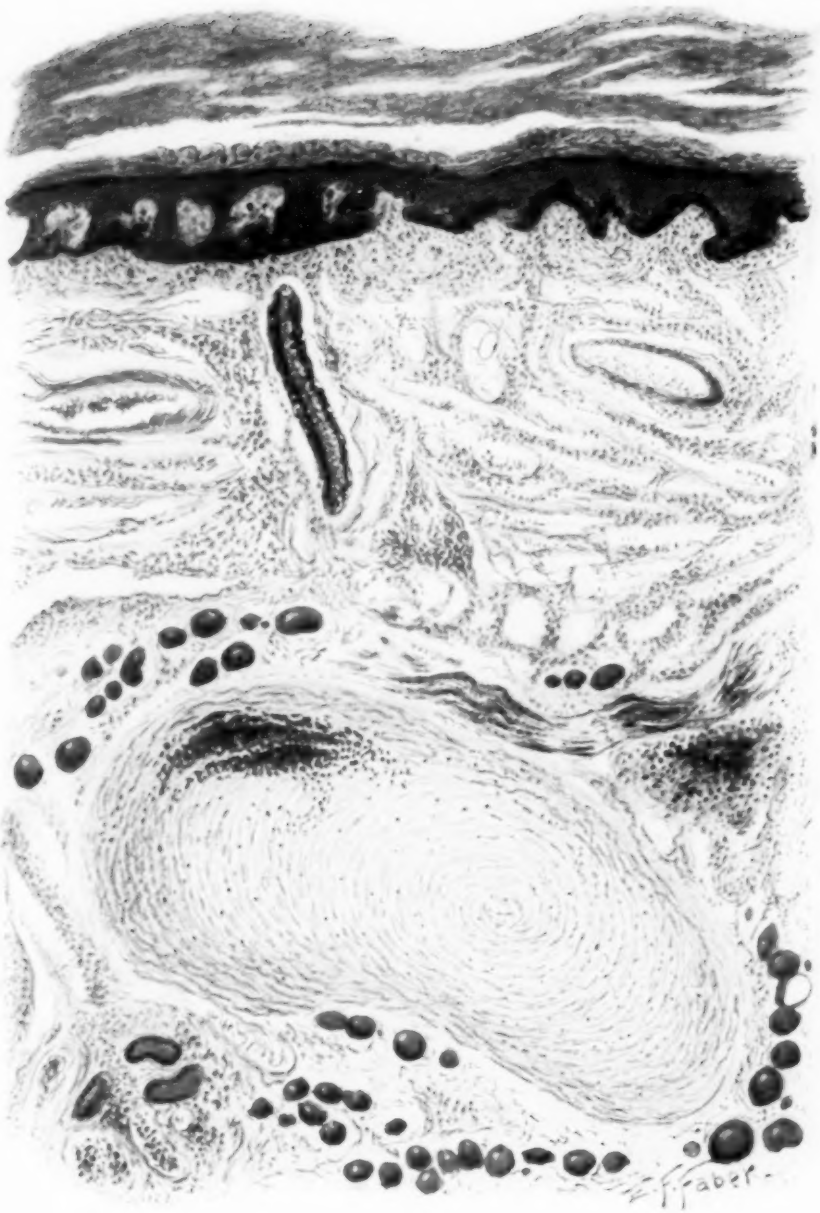


Fig. 18.—Composite drawing from different parts of frozen section, stained by sudan III, with a weak hematoxylin counterstain. The pacinian corpuscle is drawn to the same scale as the rest of the illustration. The structures staining red correspond exactly with the blue ones in hematoxylin preparations (see fig. 2) except for the subcutaneous fat.

pupils reacted promptly to light and sluggishly to accommodation. There was no "lipaemia retinalis."

Urinalysis did not yield any information which would assist in diagnosing or which would confirm the diagnosis of the calcic state. We stained the cells obtained by centrifugalizing, but none of them gave the blue color of calcification on staining with hematoxylin. The specific gravity was 1.023, the reaction strongly acid. The urine was clear when freshly passed, but a thin flocculum separated on standing. This was found to be due to cylindroids when examined microscopically. In the sediment a few epithelial cells and a few hyaline and granular casts were found. All were yellow as though bile-stained. There was no albumin, urobilin or glucose present.

The Wassermann reaction was negative (blood) during his two visits to the hospital, which were one year apart.

Examinations of the blood were made on two occasions—twelve months and fifteen months after operation. These bore out the urinary findings in that there was no evidence of diabetes mellitus (blood sugar 89 and 82), and no important grade, if any, of kidney damage (uric acid 5.2 and 3.6; urea 25 and 16). Blood cholesterol was definitely high (188), but the total amount of fatty acids (300) was within normal limits. Calcium was within normal limits (9.1 and 11.8).

Roentgen-Ray Examination.—(Dr. Henry B. Pancoast.) At the preoperative examination of the infected hand it was recognized that there was a rarefaction of the phalanges and other bones quite apart from the region of the osteomyelitis. This was confirmed at a second, very comprehensive examination about a year later, at which time general bone atrophy was reported in the left foot, right foot and left hand. This was in excess of what might be explainable on the basis of the age of the patient, advanced though it was. There was likewise bone atrophy in the thoracic spine and flattening of the vertebrae. Nothing abnormal was found in the head, left forearm, femurs or legs. There were no signs of calcuim metastases in the chest, but calcified tubercles were recognized in the lungs.

Neurologic Examination.—(Dr. William B. Cadwalader.)—This was essentially negative. The pupils were equal and reacted normally. All cranial nerves reacted normally. The muscular power of the upper and lower extremities was equal and normal. The tendon reflexes were equal and moderately diminished. The plantar reflexes were normal. Pain and touch sensations were normal on all parts of the hand and forehead; they were just as acute over the opaque parts as elsewhere.

The habitual tilting of the head to the right might be explained on the basis of superior cervical involvement; it was possibly of congenital origin.

Histologic Examination (Biopsies).—From the skin of the neck (thickened, opaque, yellowish-white part) a large specimen was secured and divided into four portions. One was fixed for paraffin embedding, a second was injected into guinea-pigs, and from a third, fresh frozen sections were cut and stained with sudan III and hematoxylin. The fourth was immersed for eight hours in 10 per cent calcium chloride solution, and thereafter fixed in a mixture of Bouin's solution and the chloride solution. The latter procedure was for the purpose of demonstrating soaps and of imitating a possible course of events in the original amputation material whereby a "postoperative calcification" may have been induced.

In hematoxylin and eosin sections there was not the slightest indication of calcareous change in any of the cutaneous structures; likewise none of the fatty features such as were seen in the hand was seen in the sections stained by sudan III.

In sections which were fixed in the presence of calcium chloride, there were no signs of calcification in any structures.

As previously stated, these sections advised us that the white opaque features in the forehead and neck were not referable to calcification, but to a tremendous elastic hyperplasia. The latter will be found described elsewhere, as they do not seem to be pertinent to the calcification.

Skin from the back of the hand likewise yielded no evidence of calcification in sections. We did not feel justified in multiplying the number of biopsies, desirable though it may have been to prove that all calcareous changes had disappeared from the skin during the interval between operation and our examinations.

HISTOLOGIC SUMMARY AND INTERPRETATION OF THE CALCIFICATION

The morbid changes occurred first in the nuclei and were primarily of fatty nature, the calcareous ones occurring subsequently. These changes could be demonstrated in the nuclei of all the structures which have been already mentioned as being calcified, i. e., epiderm, nerve trunks, etc. That this was the order of involvement was shown from the fact that the fatty changes were often found in the absence of calcareous ones, but not vice versa. As degenerative changes did not accompany the fatty ones, we believed that the basic change was one of simple fat and lipoid metabolism; the changes were akin perhaps to those at the bottom of xanthoma tuberosum.

The calcification occurred both intracellularly and extracellularly. At times (rarely) it was strictly intranuclear and occurred independently of cytoplasmic infiltration and in locations remote from other infiltrates; but most commonly the cytoplasm was also infiltrated, and generally the infiltrate extended, in addition, beyond the cell confines. It did not follow tissue interstices nor did it push tissue elements apart. The peripheral parts of the larger collections were much denser than the interiors. The effect given was that some substance in solution had been generated first in the nucleus, passed thence into cell cytoplasm, been retained there for a time, and thence oozed into the surrounding tissues. The substance was evidently not easily and widely diffusable—it appeared to have a "body" like a colloid. Thus, in its peripheral parts it did not become attenuated and fade out, but on the contrary the periphery was most sharp and more condensed than the center, as though some substance from the outside was operating to solidify or otherwise transform the substance emanating from the cell. One was reminded of the way that a drop of paint, exposed to air, congeals first externally, but remains fluid internally.

According to the sudan III sections, we had to do with a disturbance of fat metabolism in epidermal and other cells of the skin, resulting in an accumulation of fat within the cell and unattended by any physical damage to it. We believe that the deposit of lime salts took place

secondarily to the fatty processes. This calcification likewise damaged the cells, at least morphologically, only in exceptional instances. The end result was a lesion which did not betoken any serious structural alteration, and whose physiologic disturbances, if any, were not important as far as the welfare of the patient was concerned because the disease had such a restricted distribution. It was important, thus, only because it might serve as an indicator of disturbances of basic fatty metabolic processes; the latter, being general, might give information of value in respect to the general well-being of the patient. This is at present only theoretical.

The possibility of the postoperative production of this infiltration must be disposed of next. This suspicion urged itself more particularly on us as we noted the isolated, spotty way in which the infiltrate occurred in the vessel lumina, presumably in the circulating blood; it is difficult to reconcile a vice of calcium metabolism and such an ametabolic cell as the erythrocyte. As to calcification of the erythrocyte, we must fall back on the idea either that this cell was supersaturated (in a normal, metabolic sense) with calcium compounds, or that it contained a soap or other substance with which the calcium might combine. The latter rationale is compatible with the clinical circumstances in our patient and the principles underlying Klotz's method for the histologic demonstration of soaps in tissue. It brings us up to the entire subject of calcification in this hand, and would apply to the epidermal and other cells as well as to erythrocytes and would run somewhat as follows: We begin with the information that a fatty process, however produced, was present. Our sudan III sections proved this. Passing now to another angle, we are justified in believing that the osseous tissue of the hand contained soluble calcium salts. These now diffused into the soft parts and combined with the soaps, etc., of the epiderm and elsewhere. Klotz's teaching calls for this very thing; indeed, he adds calcium salicylate to his fixing fluid for the express purpose of demonstrating soaps histologically.

This rationale would be particularly welcome if it were certain that the patient did not have a very high blood calcium figure at the time of operation to explain the calcium deposit. It is true that a normal lymph drainage from the decalcifying bones would carry the calcium below and away from the skin, but it must be recalled that the lymph circulation was not normal in this hand—the roentgenogram showed that the part was hugely swollen, and under these circumstances the calcium salts would readily diffuse into the skin. In short, the soft parts were soaked with calcium. A general hypercalcemia is thus not a sine qua non, nor need the cutaneous calcification necessarily be a general one. As things stand today, while we know of no way of disproving that the calcification occurred postoperatively, it is equally impossible to prove that it did not occur preoperatively; even were the calcification localized to the hand

and not part of a general calcic metastasis, the diffused calcium salts could combine with the soaps intravitam just as readily as in vitro. Add to this the facts that (1) there are good roentgenologic reasons for suspecting a rather widespread absorption of calcium from the bones and (2) that the experimental addition, in vitro, of calcium chloride to the fats in the "pseudoxanthic" skin of the neck did not result in calcification in our sections, and we submit that the preponderance of evidence is in favor of the intravitam development of the calcification.

Whichever the modus operandi of the calcification may have been, preoperative or postoperative, it remains that there was, basically, a lipoidal or soapy change and that the calcium combination betrayed its presence, if only in sections. Without this combination the fatty change would probably have passed unnoticed.

PATHOGENESIS

We have already indicated that there were at least two widely different chemical substances in this skin, fats and calcium; this makes it necessary to reconcile at least two processes when we essay to trace the genesis of this dermatosis. Fortunately, these two substances have already been connected—Klotz is the one who has blazed the way to a partial solution. His idea is that in the process of calcification there is a preliminary fatty metamorphosis of tissue and that the final calcification comes about through a series of intermediate changes in which soaps figure. His theory has been attacked, it is true, by no less an authority than Wells, among others, but it is sound chemically, has been supported experimentally and needs little more proof than the direct evidence of cases such as ours. We feel that our case materially strengthens Klotz's position on the general pathology of calcification.

As the calcification always had the fatty associates, we are at once relieved of the necessity of considering mechanisms of calcification other than that of Klotz. "Kalkfanger" and esterase factors do not concern us except as the fatty phase in our cells itself constitutes the "Kalkfanger." We must add that the elastic tissue in this skin (elastic tissue is a notorious Kalkfanger) and the subcutaneous fatty tissues were unaffected.[1]

There are, then, two phases to cover—the fatty and the calcific. Through what agencies could they have been brought about?

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1. R. Robison and K. M. Soames (Biochem. J. **18**:740, 1924) found that various tissues, but not all (skin not tested), contain an enzyme—an esterase which acts on certain phosphorus compounds and therefore could be concerned in the general problem of calcification. If this could be shown for the skin it would make a welcome break into the dark unknown of epidermal metabolism which might have an application to our case.

The Basic Fatty Processes.—Hypothesis 1: We can conceive for a moment how a seborrhea might be at the bottom of the fatty excess; while sebaceous glands are not normally present on the palm, the sweat glands might serve as substitutes, because they secrete so much fatty material, as was brought out very clearly in the sudan III sections. This explanation is not sufficient, however, for it does not include the participation of the nerve trunks in the fatty process. These, which contain a chemically different fatty substance (myelin), cannot be stretched into a connection with the products of secretion of the sweat glands. The overactivity of sweat glands might readily, however, explain the fattiness of the epidermal cells—these are in such close anatomic relation with the sweat ducts. Sections did not disclose, however, that the fatty substance of the epiderm was particularly abundant around the sweat orifices or connected with them; indeed, it was restricted to certain of the epidermal layers. Since there was no evidence in our sections that there was a fatty saturation of the epiderm in general, and there were already objections in the form of fat in the nerve trunks and other places dissociated from sweat glands, we are justified in rejecting the sweat glands as the source of fat.

Hypothesis 2: The fatty change was the result of severe toxemia incident to cellulitis. Against this we need only say that when the fatty changes are consequent on toxemias they are associated with nuclear and other retrogressive phenomena which were not present in our case. The cellular detail was exquisite in our sections.

Hypothesis 3: Long-continued wet dressings induced metabolic upsets which eventuated in the diffuse lipoidal saturation of nucleus and cytoplasm. If the foregoing is true, it is a new finding which remains to be proved. We can only add that mercuric chloride, which may have been employed in the dressings, is always our first thought in connection with calcification of renal epithelium.

Hypothesis 4: The fatty change is idiopathic, the effect of unknown basic fatty metabolic processes. Perhaps it is bound up with a long-continued contact on the part of the cutaneous structures with fats such as is seen in acne, seborrhoeic dermatitis, etc.: fatty radicals become an integral part of the fat-soaked cell, or at least a member of a goodly portion of the molecules. But why the cells in one stratum of the epiderm should escape, we cannot say. We feel compelled to fall back on the metabolic theory as the only remaining explanation for the fatty changes in our patient, particularly in view of the concomitant fatty changes in the elastic tissue of the neck.

The Essentially Calcific Phase of the Calcification.—The first thought, particularly when the roentgenograms disclosed such marked rarefaction of bone, was the "Kalkmetastase" of the Germans; and close on it came the suspicion of parathyroid disease. (It is significantly in line

with our case that one of Virchow's [2] original patients who had kalk-metastase died with a caries of the lower thoracic region, and one of Schlapfer's [3] with necrosis of the femur.) Both of these suspicions suppose a generalized somatic hypercalcosis which was not borne out by the blood chemistry; but it must be repeated that while the blood calcium was not increased at the time the sample was drawn, it may still have been increased a year previously, at the time of operation.

An alternative possibility is that the resorption of bone calcium was only local and that the calcic saturation of tissue was local—restricted to the hand. Renal and other eliminative agencies could prevent the accumulation of calcium in the blood, provided the resorption was gradual and of limited amount.

After all, there are too many breaks in our chain of evidence to enable us to dogmatize in favor of either the local or the metastatic ideas. This is not more than is to be expected under the circumstances surrounding our patient; where one's material was limited to a single personal experience, and where the literature was so barren. From what we know of the general pathology of fatty change (Adami),[4] we would submit the following as a working hypothesis which at least accommodates our case.

SUMMARY OF PATHOGENESIS

Our patient was the subject of some recondite fatty dyscrasia in which fats were readily discharged from the blood not only into degenerate tissue (elastic) but also into certain cells (epiderm) whose metabolic perversions (whatever they may have been primarily) had also extended into the fatty realm and laid the cells open to an abnormal infiltration with fat (seborrheic dyscrasia, pro parte). In the presence of excess calcium salts (hand), the fats were partly replaced by calcification according to the ideas of Klotz.

We would point out that the metabolic perversions were expressed above in such a form that they could also be applied to explain the absorption of fat on the part of the degenerate elastic tissue in the neck. The predilection of the calcification for the knuckles which was shown in Spalteholz preparations may depend on the same factors of stress which have been invoked to explain a similar distribution in xanthoma tuberosum and produced the yellow striae over the knees in Jadassohn's [5] cases of cutaneous calcification.

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2. Virchow, R.: Virchows Arch. f. path. Anat. **8**:108, 1855.

3. Schlapfer: Virchows Arch. f. path. Anat. **7**:160, 1854.

4. Adami, J. G.: Principles of Pathology, Philadelphia, Lea & Febiger, vol. I, p. 897, 1910.

5. Jadassohn, J.: Arch. Dermat. u. Syph. **100**:317, 1910.

PHYSIOLOGIC CONSIDERATIONS

The severe tendency for the calcification to affect ducts rather than the coil glands recalled at once the selective properties of the different portions of the tubules of that other "acid-excreting" organ, the kidney, and stimulated an inquiry into the condition of the latter in calcareous metastasis. On doing this we found that all three organs importantly concerned in "acid-excretion," namely, the stomach, lungs and kidneys, are the seats of calcium deposit in this disease. But in the cases reported the epithelium itself was never affected; the deposits occurred under the basement membrane. The theory is that as the result of acid secretion there is a return of serum from the cells which is more alkaline than normal; this alkalinity favors a deposit of lime salts adjacent to the cells. Furthermore, in the case of the stomach, not only were the calcium deposits restricted to the cardiac end, but to that course of the peptic tubule which contains acid cells! More to the point, in relation to the sweat glands of our case is the fact that the deposits in the kidney occurred around the straight collecting tubules.

It appears that the skin was not examined in any of the reported cases of calcareous metastasis, except Jadassohn's, but certainly this fourth set of glands should be included in future studies in view of what we know of the at least sometime acidity of human sweat. Since the calcific changes occurred so regularly in such significant organs as the stomach, kidneys and lungs, the calcareous changes in the skin of our patient may be appropriated as an indicator of the acidity of the parts in our patient. The interpretation from this would be that in our patient the sweat at first secreted in the coils was generally neutral or but slightly acid, but that when it reached the ducts their lining cells abstracted alkaline substances and lead to calcium deposits.

Two attempts were made to secure sufficient quantities of sweat from our patient for chemical analysis. He was enclosed in a rubber blanket, surrounded by hot bags, fluids were forced, and on one occasion pilocarpine ($\frac{1}{10}$ grain) was given hypodermically. In neither case was sweat secreted in collectible quantities, although the patient complained greatly of discomfort from the heat. It will be recalled that during dermatoscopy we observed droplets of sweat on the forehead—sweat secretion was impaired but not suppressed; and at that examination the reaction was found acid at first but later alkaline.

RELATIONSHIP BETWEEN CUTANEOUS CALCIFICATION, TUBERCULOSIS AND ELASTOSIS

It will be recognized that all three of the foregoing processes affected our patient. We comment on the combination because the members of it have been connected under a variety of circumstances in human medicine

in general. We would raise the question whether this triad should not be regarded as a generality for the entire body.

To begin with, Disen [6] discussed the relation of calcium deficiency to pretuberculous states, but his contribution is purely speculative and scarcely within the province. More to the point, calcification has been so conspicuous in tuberculous lungs that calcium lactate has been highly extolled by some in the treatment of pulmonary tuberculosis. Indeed, so insistent has this lead been that Maver and Wells [7] conducted an extensive study on the deposition of calcium in experimental tuberculosis in guinea-pigs. True, they did not find that their calcium therapy modified the course of tuberculosis; "the enthusiastic opinions of the few have not been corroborated by the experience of the many" is a form of expression that is well worth adoption as a stock commentary on many other (and mushroom) therapeutic fads of the present day. But at the same time these authors brought much to our thesis, for they found that by chemical analysis there was "a marked tendency to the accumulation of calcium in tuberculous tissues, even where calcification was not visible microscopically." And they cited Brasci that there were substances in the lungs which have the property of fixing calcium; thus, after the insufflation of bismuth salts the lungs of animals contained three times the normal amount of calcium! Further back into the chemistry of the calcium combinations these observations did not go, but they suffice to show that there are "Kalkfanger" effects in the lungs, both with and without tuberculosis.

In respect to the elastic tissue partner of the triad, little need be repeated here of its susceptibility to calcification. This has been thoroughly established experimentally by Wells; [8] both Davidsohn [9] and Huebschman [10] brought this subject yet closer home when they reported cases of elastic calcification (lungs) in genuine cases of "Kalkmetastase." In the latter cases there was a selective effect on the part of the elastic tissue for the calcium; indeed, it became so brittle that it became segmented. Other tissue components of the lung did not attract calcium.

As between tuberculosis and elastic tissue, tuberculosis of the lungs, of course, assumes the destruction of much elastic as well as other tissue. We will discuss later the possibility of a soluble product of elastin's being carried to the skin or elsewhere and again assuming a solid form. The tuberculosis-elastosis-calcification triad will not down; it continually

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6. Disen, C. F.: M. Rec. **82**:16-18, 1912.

7. Maver, M. E., and Wells, H. G.: Am. Rev. Tuberc. **7**:1-32, 1923.

8. Wells, H. G.: Chemical Pathology, ed. 3, Philadelphia, W. B. Saunders Company, 1918, p. 438.

9. Davidsohn, C.: Virchows Arch. f. path. Anat. **160**:538, 1900.

10. Huebschman, V.: Zentralbl. f. allg. Pathol. u. path. Anat. **19**:737, 1908.

crops out (this time in the skin), just as the heart, kidneys and arteries project themselves in company when under the appropriate senile circumstances.

Let us next apply those generalities to our skin case. The calcification factor here could be brought into line on the basis of tuberculosis, either pulmonary or cutaneous, but it need not be, because there is already an explanation in the form of bone resorption. From the other angle, however, whereas it might suggest a similar osseous origin for the lime seen in cases of extreme tuberculous calcification, Maver and Wells found that there was no demonstrable demineralization of the bones in their tuberculous guinea-pigs. As between tuberculosis and elastic tissue, we would recall the connection between the extreme destruction of elastic tissue which occurs in pulmonary tuberculosis and the frequent occurrence of tuberculosis in cases (particularly the first reported ones) of pseudoxanthoma elasticum. And now, in this case of senile elastosis we encounter both calcification and tuberculosis. There is, indeed, a curious interweaving of these three factors. We speculate whether the products of elastolysis in the lungs or elsewhere could be transported to other parts and be deposited there as an expression of increased elastin metabolism on the part of fibrous tissue cells which now become oversupplied with "preelastin." The rationale would be akin to that of amyloid infiltration, except that we do not invoke any metabolic factors in connection with the deposition of the amyloid. It is known that elastin, like that other scleroprotein, cartilage, has a special affinity for calcium which promotes a deposit of lime salts in it. Such concepts would allow us to join an original pulmonary tuberculosis with an elastosis of the skin as well as a calcification.

CALCIFICATION OF NERVE TISSUE

We could find no other reports in the literature of calcification occurring in the peripheral nerves, and after conversation with several eminent neurologists, we concluded that ours is a unique case in this respect. But in respect to calcification as it occurs in the central nervous system, the neurologists assist us in understanding our cutaneous case by recording again the association of lipoid substances with the calcification (Bassoe and Hassin [11]). Weimann [12] advocated Hofmeister's theory of "dystrophic" calcification, i. e., a change in the colloidal state of the blood —an absence of "protective colloids."

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11. Bassoe, P., and Hassin, G. B.: Calcification of the Cerebral Vessels with a Clinical Picture Simulating Brain Tumor, Arch Neurol. & Psychiat. **6**:359 (Oct.) 1921.

12. Weimann, W.: Monatschr. f. Psychiat. u. Neurol. **50**:232, 1921.

REVIEW OF THE LITERATURE

This has not disclosed any cases quite like ours. The closest approaches were those in which calcification was found in relation to necrotic foci of collagen (Kauffmann-Wolf and Heinrichsdorff [13]), and in the elastic masses of pseudoxanthoma elasticum (Tannenhain [14]). Morse's [15] instance in which the subcutaneous tissue of an infant became calcified may also be in line. Becker's [16] recent paper brings the general subject of cutaneous calcification up to date and supplies a full bibliography.

There is mention of cutaneous "Kalkmetastase" in but one communication, that of Jadassohn.[5] The 14 year old boy died following suppurative osteomyelitis of the chest, and at necropsy a genuine "kalkmetastase" was demonstrated in the lungs, kidneys and skin. There was an outspoken rarefaction of long bones. Histologically, it was found that as far as the skin was concerned, the calcium elected the elastic tissue. Nerve tissue, sweat apparatus and epithelial structures in general were spared. The picture was not like ours, but it is interesting that calcium was found "in the epithelium" of both the convoluted and straight kidney tubules, because it reflects on the sweat ducts in our case.

Dermatologically, the lesions consisted of elevated yellow striae around the knees, elbows, shoulders and thighs. (It will be recalled that our patient exhibited faint ones.) A sharp black line was seen in roentgenograms in the skin. Jadassohn's paper is too lengthy to abstract here; those interested will profit by his discussion of the relationship of calcification to elastic tissue striae in the skin of his cases and the occurrence of tuberculous coxitis in one.

The points that Jadassohn brings to us are: that when a nodular eruption appears over the knees of children, which later changes to elevated yellow striae, such striae may subsequently become infiltrated with lime salts, provided the appropriate hypercalcemia or other calcium disturbance ("Kalkmetastase" is only one) is superimposed. In the case of our patient, the basis was not the same elastic one as in Jadassohn's; the only thing in common was the osseous changes. It is probable that the basic changes in the skin which can attract calcium are various—in ours it was the fat.

SUMMARY AND CONCLUSIONS

In an old man affected by senile elastosis there was calcification at several places on a hand which had been amputated a year previously.

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13. Kauffmann-Wolf, M., and Heinrichsdorff, A.: Dermat. Ztschr. **37**:193, 1922.

14. Tannenhain, E. G.: Wien. klin. Wchnschr. **14**:1033, 1901.

15. Morse, J. L.: Am. J. Dis. Child. **22**:412 (Oct.) 1921.

16. Becker, S. W.: Osteosis Cutis, Arch. Dermat. & Syph. **10**:163 (Aug.) 1924.

The calcification was distributed not only in the epiderm but also widely throughout the corium, involving sweat ducts and glands, pacinian corpuscles and nerve trunks, as well as fibrous tissue of the corium. This was regarded as the expression of calcareous metastasis because there was definite resorption of the bone in several parts of the skeleton. The latter was brought out by roentgenograms, and by both gross and microscopic study of the amputated hand; it was probably inaugurated during an attack of osteomyelitis which occasioned the amputation a year previously. At a later examination there was no excess of blood calcium. All of the cellular elements of the marrow were atrophic, the red elements being replaced by fat.

As far as we can determine, we report herewith the first case of calcification of the skin in which epithelial structures were involved; other cases have concerned only the collagenous parts. It is probably also unique in that the peripheral nerves were affected.

A new function, i. e., excretion of calcium, must be added to those of the skin, albeit only in pathologic states. In calcareous metastasis a fourth set of acid-excreting organs, namely the sweat glands, must receive consideration in the future.

The distribution of the calcification in the sweat apparatus may indicate that different portions of the tubules have specific secretory properties like that of the kidney. As calcium cramming will induce deposits in the stomach and kidneys, it is conceivable that they could be induced experimentally in the sweat apparatus. If this is the case, calcium cramming becomes a means of experimentation on the physiology of sweat secretion, particularly in relation to hyperhidrosis and eczema.

As the calcification and elastosis never appeared together in our sections, we believe that they were not genetically related except so far as they may have been the effect of the same tuberculosis factor. There are reasons for linking calcification, elastosis and tuberculosis.

We cannot quote any ready clinical means for recognizing the calcification. The performance of a biopsy appears to be necessary.

A fatty change (not degenerative) preceded the calcification and supports Klotz's "soap theories" as to the general pathologic process of calcification.

In patients with extensive bone destruction, the possibility of general skeletal bone resorption should be remembered; where the roentgenograms demonstrate the latter, we would welcome biopsies to determine how commonly the sweat apparatus may exercise this vicarious calcium elimination.

DISCUSSION

Dr. Joseph V. Klauder, Philadelphia: It has been only in recent times that studies have been reported relative to the chemistry of the skin chiefly by leather chemists. From our studies of the chemistry of the skin of man, rabbits

and dogs, there is considerable variation in the mineral content, particularly of calcium. Such studies suggest an inverse relation between the calcium and potassium content and cutaneous irritability. The less the irritability, the greater the likelihood of a high calcium content and a low potassium content, and vice versa. These findings are consistent with the observations of others relative to the rôle of these elements in regulating cellular activity, particularly in establishing an equilibrium between the sympathetic and parasympathetic nervous system, as, for example, the balanced solution of Ringer and its effect on the isolated heart. These findings may serve, perhaps, in the visualization of the rôle of the vegetative nervous system in the pathogenesis of skin diseases, particularly eczema. In the present state of knowledge these findings cannot be correlated with Dr. Weidman's studies, but it is possible that further studies of the chemistry of the skin may help to elucidate the pathogenesis of the condition reported by Dr. Weidman.

Dr. W. S. Thomas, Clifton Springs, N. Y.: Recently I had the opportunity of performing a necropsy in a case of metastatic calcification. The patient was a boy who died in uremic coma. All of the small arteries, so far as we could determine, showed marked calcification, and there was the same rarefaction of the bones that Dr. Weidman's patient showed. We found one large calcareous plaque in the skin of the right buttock. The histology of the skin has not been worked out as carefully as in Dr. Weidman's case. One feature which may have some bearing is that we found two parathyroids, each measuring 2 cm. in diameter. They were the largest I have ever seen. Recently there was an editorial in *The Journal of the American Medical Association* warning against the too free use of the parathyroid hormone on account of the possibility of the calcium being dissolved out of the bones of the body. What causes the deposit of calcium is unknown, but it may be due, as Dr. Weidman and others suggest, to the acidity of the kidney, stomach and alimentary tract in general, causing the calcium to be precipitated in these localities.

Dr. Fred D. Weidman, Philadelphia: In our case the arteries also were calcified, but that loses its force in a patient, aged 72. We considered the rôle of the parathyroids, and I shall be very grateful for any information concerning a clinical method of approach to the condition of the parathyroids. We had thought of injecting parathyroid extract to see whether we could stir up some new calcification in other parts of the body, but this did not promise well, and did not offer any definite attack on the parathyroid.

PIGMENTED STRIPE IN THE NAIL*

H. J. TEMPLETON, M.D.

OAKLAND, CALIF.

The subject of pigmentation of the nail is rarely mentioned in medical literature. There is frequent mention of other abnormalities such as leukonychia, transverse or longitudinal ridges, pits and cracks, but no notation of cases of pigmented stripes of the nails. A search of the available texts, journals and the "Index Medicus" has disclosed but one case similar to the one described here. In 1917, Montgomery presented a clinical report of such a case accompanied by a photograph.

DIGEST OF CASE REPORTED BY DR. MONTGOMERY [1]

"The following is a description of a condition which I have never observed before and which I have never seen mentioned." The patient, a Jew, aged 36, had syphilis in 1903, had received treatment for it and the Wassermann test had become negative. He had recently been successfully treated for eczema of the hand by means of the roentgen ray.

This treatment had been followed by a mild radiodermatitis of the thumb. Shortly after this there was noted "a discolored band 3 mm. broad running up the center of the thumb nail from the base to the free edge." It "could be seen to lie in the whole thickness of the nail" (fig. 1). This nail had been lost two years previously owing to some unknown cause, and had regenerated. Dr. Montgomery considered the possibility of syphilis, previous shedding of the nail, and eczema or radiodermatitis producing the pigmented band, and ruled them all out as possible etiologic factors. He concluded that, "The most reasonable explanation for the phenomenon seems to be that it was the result of a pigmented naevus situated in the nail groove and producing pigment in the newly formed nail that grew out with the natural growth of the nail." No histologic sections were prepared from this nail.

Dr. Moncorvo Filho presented an unusual case of a vascular angioma of the root of the nail, but his description does not correspond to the cases considered here.[2]

The rarity of this condition is evidenced by the opening sentence of Dr. Montgomery's paper. This was further emphasized by my failure to find mention of it after careful search throughout a considerable volume of literature. Moreover, a number of dermatologists of

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* One of three papers acting as a thesis leading to the degree M. Sc. (Med.) in the Graduate School of Medicine of the University of Pennsylvania. This particular piece of work was done in the dermatologic clinic of Dr. Harry Alderson of Stanford University, School of Medicine, San Francisco.

1. Montgomery, D. W.: A Pigmented Stripe of the Thumb Nail, J. Cutan. Dis. February, 1917, p. 99.

2. Filho, Moncorvo: Un caso de angioma vascular na raiz da unha, Brazil-med. **11**:127 (Sept.) 1921.

experience stated that they had not previously observed such a condition. On account of this evident rarity, the following case which came under my observation was considered worthy of being studied and recorded.

Dora C., aged 28, colored, came to the dermatologic clinic of Stanford University complaining of a longitudinal discoloration of the nail of the fourth finger of her left hand. This was first noted nine years before as a small dark spot at

Fig. 1.—Montgomery's case of pigmented stripe in the thumb nail.

Fig. 2.—Hand in author's case.

the root of the nail. This gradually grew out toward the tip of the nail, forming a fine line about as thick as a hair. During the last two years this had slowly grown to its present width. The patient said there was no trauma of the nail prior to the onset of the trouble; she also said that she had not ingested arsenic. The Wassermann reaction had been negative repeatedly during the last five years. Albuminuria had been discovered several times; but at present the urine was normal. There was no history of any previous dermatosis. The past history

otherwise was uneventful. There was some white blood in the family, the patient being about one-eighth white. Her mother, father, brothers and sisters had quite a few pigmented moles on various portions of their bodies but no similar abnormalities of the nails. Examination disclosed a well developed negress. The general physical examination was practically negative and was inconsequential. Scattered over the body were many small, light brown, pigmented moles. On the flexures of her arms and legs, in the axillae and over the pubic region, there was a mild seborrheic dermatitis which she had had for three weeks.

The finger-nail of the left ring finger showed a dark brown to almost black, linear pigmentation running parallel to the axis of the nail and extending from the proximal end to the free border (figs. 2 and 3). This streak was about 3 mm. in width. It could easily be seen that it was not merely a discoloration on the surface of the nail but rather was actually in the substance of it and extended through to the under surface. There was no tenderness present. The nails were otherwise normal. The original clinical diagnosis was pigmentation of the nail, pigmented nevus.

Permission was requested to remove a small portion of the nail and matrix for histologic section, but this was refused. However, the patient being requested to do so, allowed the nail to grow quite long and allowed the free portion to be clipped off for examination.

Fig. 3.—Affected nail in author's case.

METHOD OF PREPARING AND STAINING SECTIONS

It was felt that the usual routine mounting in paraffin would not be satisfactory, so a method of preliminary softening was adopted. No fixative was used. Instead, the specimen was soaked in 10 per cent acetic acid for five days. It was then dehydrated by the usual method and mounted in paraffin block. It is possible that a standard celloidin preparation would have worked just as well.

Sections were made and stained with hematoxylin-eosin, Unna's polychrome methylene blue, van Gieson's, Berlin blue, basic fuchsin and saffranin.

HISTOPATHOLOGY

In order to show a gross picture of the pigmentation, a very low power (x 20) photomicrograph (fig. 4) was made from the unstained section. This clearly demonstrated the presence of the pigment throughout the entire thickness of the nail. It is to be noted that the greatest amount was nearer the under surface and that it diminished as it extended outward.

Under high power magnification, the pigment granules plainly could be seen occupying the cornified cells (fig. 5). In the deeper portions of the nail there was a considerable quantity of this pigment found in the cells. As the center of the nail was reached, the amount of pigment decreased, but traces could be found in the cells even to the outermost layers. In shape, the collections of pigment conformed closely to that of the flattened, elongated, horny cells which contained them. The appearance of these granules was the same regardless of how the balance of the nail stained with the various dyes. The pigment granules always retained their dark brown color and refused to take any of the stains.

Dr. William Ophüls was so kind as to render the following histologic report: "In a certain region the cornified cells of the nails are filled with very finely granular dark brown pigment. As the cells become flatter

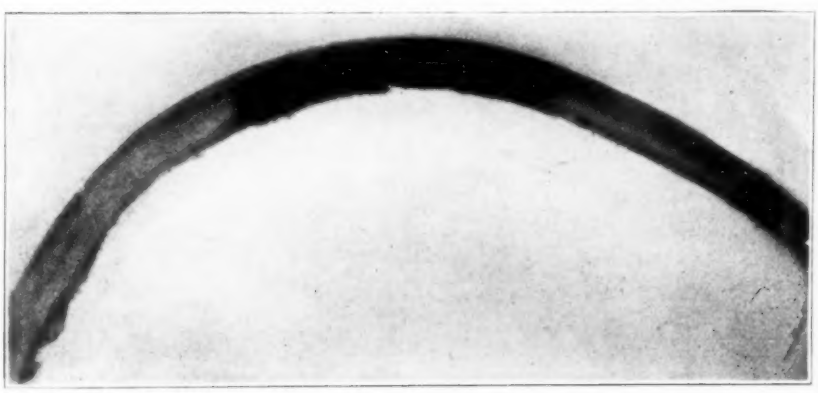

Fig. 4.—Cross-section of nail in author's case.

toward the outer surface, the amount of pigment in them seems to decrease gradually, but some of the very flat cells at the surface still contain small amounts of pigment. Pigmentation, autochthonous, nail."

CONSIDERATION OF ORIGIN OF THE PIGMENT

Several theories concerning the origin of the pigment were considered.

1. Could it be due primarily to trauma and subsequent deposition of hemosiderin in the cells? This possibility is ruled out by the lack of any history of trauma and by the failure of the granules to give the hemosiderin reaction when stained with Berlin blue.

2. Could this be an arsenical pigmentation? The absolute denial of the ingestion of arsenic or proprietary drugs which might contain it, together with the absence of other patches suggestive of arsenical pigmentation, would speak against this. I would have liked to have tried

Osborne's [3] method of staining for arsenic in the tissues, but the material was exhausted before this method occurred to me.

3. Could this be a localized parakeratosis? The cells of the basal layer of the skin are deeply pigmented in negroes. Could it be that by a process of parakeratosis these cells are retaining their nuclei and pigment up into the nail, analogous to the stratum corneum? This cannot be true because none of the dark areas take the nuclear stains and hence are not nuclei.

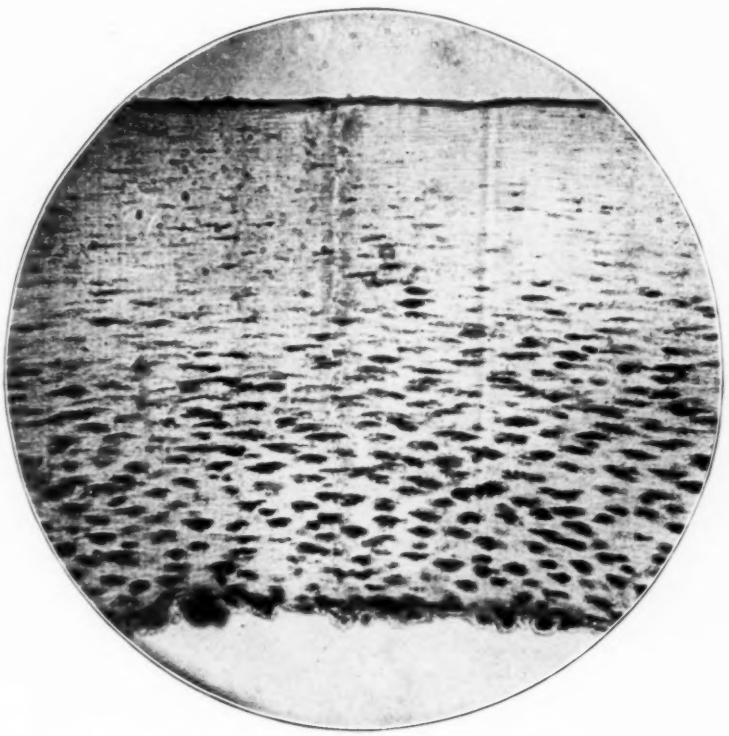

Fig. 5.—Pigment granules; saffranin stain.

4. Is this a pigmented nevus of the nail? By a consideration of the various staining methods used and by the process of elimination, there can be little doubt that the pigment is melanin. The gradual spontaneous evolution of a patch of pigmentation due to melanin, and independent of any known etiologic factor in a patient who has multiple pigmented moles and whose entire family has the same type, would seem to place this case in the class of pigmented nevi. However, in the

3. Osborne, Earl D.: Microchemical Studies of Arsenic in Arsenical Pigmentations and Keratoses, Arch. Derm. & Syph. **12**:773 (Dec.) 1925.

absence of sections taken from the nail fold or nail bed, absolute histologic proof that this is a nevus is wanting. Therefore, it is labeled as a "pigmented stripe in the nail."

SUMMARY

Linear pigmentations of the nail would seem to be of infrequent occurrence. Only one other such case could be found in the literature. Another case is presented here with histologic observations and with a consideration of the various possible causative factors. The conclusion is reached that this case is probably one of pigmented nevus of the nail.

XLIX.—DERMATITIS OF THE DIAPER REGION IN INFANTS (JACQUET DERMATITIS)

J. V. COOKE, M.D.

Associate Professor of Pediatrics, Washington University

ST. LOUIS

A dermatitis affecting infants almost exclusively, limited to the diaper area, and consisting of an erythematous, papular or papulovesicular eruption, frequently with superficial erosions, has long been recognized as a clinical entity. Since Jacquet's excellent description of this condition in 1886 differentiated it from hereditary syphilis with which it had formerly been frequently confused, the eruption has been designated by many dermatologists as "jacquet dermatitis." Although the etiology was obscure to the earlier observers, it became evident later that the condition was more or less frequently accompanied by the presence of ammonia in the diapers of the affected infants, and, in recent years, pediatricians, who see the lesions relatively frequently, have considered it an ammonia dermatitis and have confirmed its constant association with "the ammoniacal diaper." The origin of the offending ammonia in infants' diapers was the subject of considerable speculation, and, while various measures resulted in the temporary amelioration of the complaint, no therapy gave constantly satisfactory results. In observations [1] published a few years ago, I was able to demonstrate conclusively the origin of the ammonia, and, as a consequence, to suggest therapy which constantly led to an immediate suppression of ammonia in the diapers, with rapid and permanent cure of the cutaneous lesions. The efficacy of the suggested therapy has been so abundantly confirmed that it is now used almost as a routine by American pediatricians. At the instance of several who felt that the foregoing observations on the etiology and therapy of this ammonia dermatitis should be brought more directly to the attention of dermatologists, the present brief summary of the subject is given.

Since the explanation of clinical features becomes apparent only after the mechanism of the ammonia formation is understood, a brief description of the process follows:

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*From the Department of Pediatrics, Washington University School of Medicine, and the St. Louis Children's Hospital. (Published as one of a series of Studies, Observations and Reports from the Dermatological Departments of that university and the Barnard Free Skin and Cancer Hospital, service of Drs. M. F. Engman and W. H. Mook.)

1. Cooke, J. V.: The Etiology and Treatment of Ammonia Dermatitis of the Gluteal Region of Infants, Am. J. Dis. Child. **22**:481 (Nov.) 1921.

By appropriate methods there can be demonstrated in the feces of many infants as well as in older children and adults, a nonpathogenic, nonmotile, gram-positive bacillus, which has a marked ability to form ammonia from urea,[2] a property other intestinal bacteria do not possess. This bacillus is constantly present in the fecal discharges of those infants whose diapers have an ammoniacal odor. It has been named *Bacterium ammoniagenes* and is probably one of the chief bacteria concerned in the destruction of urea in sewage, playing its part in rendering the nitrogen again available for the growth of plants. The frequent soiling of the gluteal region in infants by feces leaves the skin of this area contaminated by the intestinal bacteria. When the diaper is wet by urine a good culture medium is furnished and a favorable temperature for their growth. The growth products of most of the intestinal bacteria are not irritating, but if *Bact. ammoniagenes* is present there is a production of free ammonia from the urea and consequent irritation of the skin. This bacterial multiplication contaminates the skin still more extensively, and the continued formation of ammonia in the same way later accentuates the condition.

The foregoing explanation is in accord with the clinical phenomena in the occurrence of ammoniacal odor to the diapers and the resulting dermatitis. Among these observations may be mentioned the formation of ammonia in the wet diaper in situ only; the presence of the erythema commonly noted in the morning after the child has lain in a wet diaper for some hours; the greater incidence of the condition under circumstances favoring prolonged incubation of the wet napkins, as in winter and in colder sections of the country; the relative immunity of breast fed infants because the more acid contents of the large intestine is less favorable to the presence of *Bact. ammoniagenes;* the greater tendency for the condition to occur in infants who are fed a diet relatively high in protein with alkaline stools, since this favors the multiplication of the organisms in the large intestine; and, finally, the complete disappearance of the trouble after the infant passes the diaper age. It must be remembered that the ammonia formation is influenced, even in infested infants, by several factors, as, for example, the length of time elapsing before a wet napkin is changed, the care used in keeping the buttocks clean, and whether the diapers are boiled or merely rinsed.

In considering the skin lesions, the method of their production allows a characteristic distribution: First, the eruption, while usually limited to the area actually covered by the diaper (buttocks, thighs, genitalia, and lower part of the abdomen), not infrequently may be found on the calves and heels from their contact with the external

2. The manner in which ammonia is formed from urea is through the well known reaction: $CO(NH_2)_2 + 2H_2O = (NH_4)_2CO_3 = 2NH_3 + H_2O + CO_2$.

surfaces of the wet napkin. In rarer instances, when the infants are allowed to lie for considerable periods in urine-soaked clothing, the eruption may extend over the trunk as well as the legs. Second, the lesions are limited to the convex surfaces of the diaper area, since the approximated flexures and the sulci between them are protected from constant contact with the diaper and ammonia. This serves to contrast the lesions sharply from an intertrigo. The skin of infants with the so-called "exudative diathesis" is somewhat more susceptible to the ammonia irritation, and colored children are relatively insusceptible.

The skin lesions[3] may be divided into (1) erythematous and (2) papulovesicular. The erythema varies from a mild redness to an intense scarlatiniform appearance with much swelling and local heat. If the cause is removed, the skin soon shrinks and has a thickened and wrinkled appearance with shining crinkled streaks (figs. 1 and 2). Later

Fig. 1.—Regressing erythema of ammonia dermatitis in an infant 11 months of age. Appearance of the lesion twenty-four hours after further ammonia production had been prevented by treatment of the diaper. The swelling and intense erythema has regressed leaving the characteristic thickened, wrinkled, glistening appearance of the affected area.

there may be desquamation. Continued ammonia irritation has a tendency to produce localized vesicopapular lesions over the diaper area (fig. 3). These are rounded or oval, raised, red or bluish-red papules. The surface of the papule may be smooth but is frequently eroded (fig. 4). Sometimes small vesicles surmount the papules, and it is

3. The best detailed descriptions occur in articles by Jacquet (Jacquet, L.: Des Érythèmes Papuleux Fessiers Post-érosifs, Rev. mens. d. mal. de l'enf. **4**:208 [May] 1886; and in La Pratique dermat. **1**:873, 1900), and Adamson (Adamson, H. G.: On Eruptions of the Napkin Region in Infants, Brit. J. Dis. Child. **5**:13 [Jan.] 1908), while a histologic study of the lesions was made by Ferrand (Ferrand, L.: Les dermites des noveau-nés [érythème infantiles], étude histologique, Ann. de dermat. et syph. **9**:193 [April] 1908).

Fig. 2.—Same case as in figure 1 showing posterior view.

Fig. 3.—Scattered slightly excoriated vesicopapules of the diaper area in ammonia dermatitis of 6 months old infant.

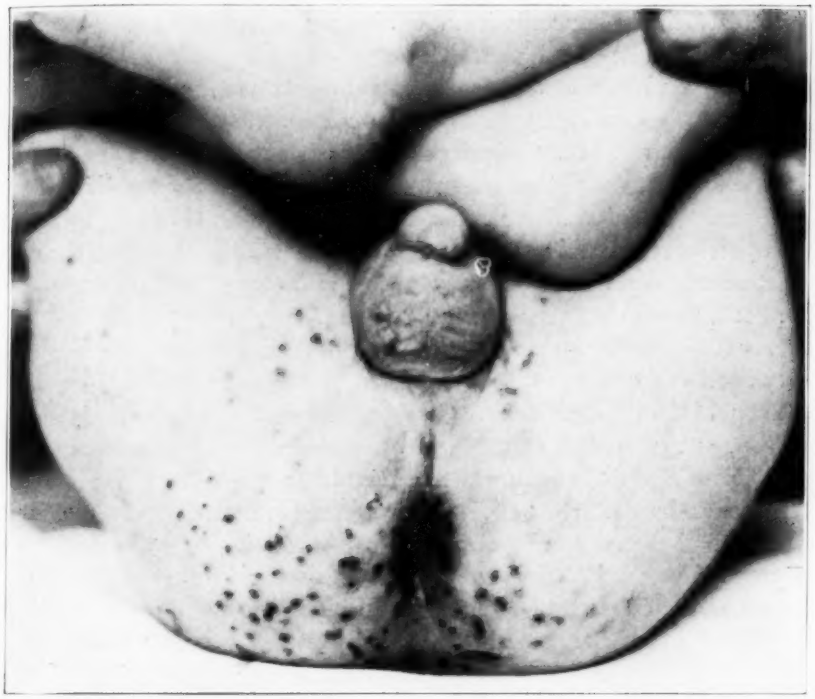

Fig. 4.—Erosions of the buttocks in a 10 month old infant with ammonia dermatitis.

Fig. 5.—Severe ammonia dermatitis in 6 year old boy with enuresis.

probable that the erosions seen are broken vesicopapules. In neglected cases in which the ammonia is allowed to continue its irritation, deeper, sharply marginated and punched out ulcers may occur. Fournier [4] reproduces a picture of a typical eruption of the latter type as an illustration of an ulcerating syphilid. Usually as the lesions regress after a shorter or longer interval, pigmented, brownish spots remain. The differentiation from syphilitic lesions is readily made by the character of the lesions, limitation of ammonia dermatitis to the convex surfaces of the diaper area, the absence of other signs of syphilis, the occurrence of the ammonia dermatitis at a later period in infancy than the syphilitic eruptions, and by the Wassermann reaction.

In addition to the occurrence of the eruption in infants, older children suffering from enuresis may be affected in the same manner (fig. 5). The conditions are identical with those found in infancy, and the growth of *Bact. ammoniagenes* in the urine-soaked clothing liberates ammonia in sufficient amounts to cause the dermatitis.

A somewhat less frequent skin manifestation, not always recognized as due to the ammoniacal diaper, is the ulceration and crusting that occurs at the external urinary meatus in circumcised male infants. This lesion has been described in some detail by Brennemann,[5] and consists of a rather superficial ulceration about the meatus, more or less covered by a crust, and accompanied by an inflammatory narrowing of the meatus. There is considerable pain on urination, and on this account the bladder may become much distended. The urethral orifice in female infants and in uncircumcised male babies is well protected from ammonia that may be formed in the diaper, and does not suffer any similar ulceration.

TREATMENT

The demonstration of the bacterial mechanism of ammonia formation in the diaper in infants with gluteal dermatitis suggested that the therapy should be directed toward stopping the production of ammonia by inhibiting the bacterial growth, and that it was the diaper which should be treated and not the infant. As a result of experimental trials detailed in the original publication,[1] the following procedure was recommended and has been found to stop ammonia production immediately.

The diapers, after washing, are finally rinsed in a solution of mercuric chloride 1:4,000, prepared by dissolving one 7½ grain

4. Fournier, E.: Recherche et diagnostique de l'hérédo-syphilis tardive, Paris, Masson et Cie, 1907, p. 157.

5. Brennemann, J.: The Ulcerated Meatus in the Circumcised Child, Am. J. Dis. Child. **21**:38 (Jan.) 1921.

(0.49 Gm.) tablet in two quarts of water. They are then wrung thoroughly and allowed to dry.

Ordinary diapers, even when wrung thoroughly, retain from 3 to 5 ounces (75 to 150 cc.) of the fluid. When dried, they are diffusely impregnated with the bichloride and, when later wet by urine, the dissolved antiseptic prevents bacterial growth and ammonia formation. With the elimination of the cause of the skin irritation, the eruption disappears rapidly. Indeed, so constant and effective is the treatment outlined that when the ammonical odor persists, and the skin lesions do not heal rapidly, one can be certain that the instructions regarding napkins have not been faithfully observed. In mild cases, the use at night only of diapers impregnated with bichloride may suffice to check the dermatitis, although results are more constant when all diapers used are so treated. In some instances the ammoniacal odor reappears when the use of the antiseptic is discontinued, but in most cases the treatment can be stopped after a few weeks without the recurrence of the trouble. No evidence of any skin irritation due to the mercuric chloride has been observed.

The eruption itself ordinarily requires no local treatment, although the more severe erosions and the itching during the early regression of the lesions is relieved by a simple ointment such as Lassar's paste or 4 per cent balsam of Peru. Ulceration of the external meatus may require a cotton pledget moistened with boracic acid solution and held in place over the glans for a day to prevent sealing of the opening by a crust. In older children with ammonia dermatitis complicating enuresis, the essential indication is the treatment of the enuresis.

Some physicians are fearful of the danger of accidental mercury poisoning from careless handling of the mercuric chloride tablets and solutions in the home, and hesitate to prescribe the treatment outlined above. Such a danger will be minimized by cautioning the mother always to exercise the utmost care in using the tablets and to discard the solution as soon as the diapers have been treated. It is well to mention also the corrosive action of the solution of mercuric chloride on metals such as gold finger rings. Of the other antiseptics that are free from the foregoing objection, boracic acid is the only one available, and it is far less efficacious on account of its lower bactericidal power. It must be used in a saturated solution (1 : 20) and poured on a dry diaper, which is then wrung thoroughly and dried in the air before use.

SUMMARY

The common erythematous or papulovesicular dermatitis of the gluteal region in infants described by Jacquet is caused by ammonia in the diaper, and is, therefore, a dermatitis venenata. The ammonia is formed in the wet diaper in situ by the growth of a saprophytic

bacillus (*Bact. ammoniagenes*) which splits the urinary urea into ammonia. This bacterium is derived from the intestinal contents, and infests the diaper area as a result of soiling by feces. The use of diapers dried after impregnating with an antiseptic such as mercuric chloride (1:4,000) causes a prompt cessation of ammonia formation and a rapid regression of the skin lesions.

EXTERNAL IRRITATION AS A FACTOR IN THE CAUSATION OF LUPUS ERYTHEMATOSUS DISCOIDES *

DAVID KING-SMITH, M.D.

TORONTO

In 1851, M. Cazenave wrote a paper on a disease which was called by him lupus erythematosus. Six years before, Hebra had described a condition under the name of seborrhea congestiva, which he considered was similar to the lupus erythematosus of Cazenave. A few years later, Hebra adopted the name lupus erythematosus in preference to seborrhea congestiva; yet he still held the view that the disease was associated with seborrhea.

The etiology of lupus erythematosus, even after eighty-one years since it was first described, is uncertain.

In 1903, Croker, in reviewing the causation, stated:

> A feeble circulation is a favouring influence, and not infrequently the disease dates from some form of superficial inflammation, such as scarlet fever or erysipelas. Prolonged exposure to great heat in the sun, or to great cold, especially cold winds, has appeared to be the exciting cause in some cases.

MacLeod, in his summary, states that a study of lupus erythematosus from its many aspects strongly suggests that it is not in the true sense a pathologic entity due to one specific cause, but is rather a morbid condition of the type of an erythema which is persistent and tends to be succeeded by atrophy, and which may be brought about in a person who is predisposed by a variety of causes, of which the following are the most important: (*a*) hereditary weakness; (*b*) enfeebled states of health resulting from any morbid condition—tuberculosis and rheumatism are probably examples; (*c*) a weak peripheral circulation and various circulatory disturbances arising from anemia, etc.; (*d*) a delicate condition of the blood vessels in the situations most commonly affected, owing to anatomic reasons. The direct causes are: (*a*) local causes, of which the most common are atmospheric influences, such as cold, sudden changes from heat to cold, sunlight, traumatism, bites from mosquitoes or other insects, or local microbic action; (*d*) toxins reacting through the skin via the blood stream, such as toxins resulting from imperfect metabolism in the alimentary tract or from defective action of the kidneys, or from some focal infection.

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* Read at the Golden Anniversary Meeting of the American Dermatological Association, Philadelphia, May, 1926.

The tendency of late years has been to disregard the importance of local causes, although most authors, such as Hyde, Stelwagon, Pusey, Sequiera, Schamberg and Sutton, mention the fact that in some cases external irritation has been the exciting cause, such as sunlight, vesication with cantharides, bites of insects, etc.

During the last few years I have been impressed with the frequency of external irritation being a factor in the causation of lupus erythematosus discoides, in cases coming under my notice. In a series of forty-nine cases, eighteen gave a history of some external irritation previous to the onset; namely, two followed sunburn, two burns by fat, one dermatitis from a hair dye, one burn from a steam-pipe, one from a hot water bottle burn, one from exposure to the heat of operating a theater, two from a wound, seven from mustard gas dermatitis while serving in France, and one followed erysipelas.

The seven cases following the gas dermatitis were under my observation for a long period. Four of the patients I saw when suffering from an acute dermatitis of the face, and later typical lesions of lupus erythematosus supervened. The other three patients came under my care presenting erythematosus lupus; on examination of their medical history sheets the onset was described as an acute dermatitis following exposure to mustard gas.

In a review of the report of thirty cases published in journals or reported at Dermatological Association meetings, eleven followed some external irritation. Three were ascribed to exposure to the quartz light, four to sunburn, one to eczema of the face and one to an insect bite; one was a dermatitis following neo-arsphenamine medication and one followed erysipelas. In the other nineteen cases no cause was mentioned; I fancy on close inquiry some of these, at least, would have given a history of a previous dermatitis:

In the series of seventy-nine cases quoted, twenty-nine patients gave a definite history of a previous irritation, or slightly more than 27 per cent.

DISCUSSION

Dr. William Allen Pusey, Chicago: I think that Dr. King-Smith has done well to call our attention to this factor in erythematous lupus. I have no conception of erythematous lupus except as a general toxic disturbance. I can see how external irritants would cause flushing of the face and erythematous lupus. I have seen unmistakable cases caused by sunlight and have cleared them up, to have them reappear when the patient played golf in the sun again. The matter of having it caused by external trauma I do not understand.

Dr. Fred Wise, New York: I am strongly impressed with the idea that if we take careful histories of patients with lupus erythematosus we will get a preponderance of cases with the history that the first symptom appeared after sunburn at the seashore, not so often in the desert regions.

I wish to report briefly the case of a patient with lupus erythematosus discoides of the face only, with enlarged glands of the neck. We gave a dose of filtered

roentgen rays to the neck only, over the enlarged glands, and a week later the patient had lupus erythematosus in the region exposed to the rays. This is another example of the actinic rays bringing out the latent disease.

Dr. James Herbert Mitchell, Chicago: While I was associated with Dr. Ormsby, we had a patient who developed a chronic dermatitis on the cheeks. We watched this for some time and succeeded in clearing it up temporarily. After a number of months it developed into typical lupus erythematosus.

Dr. Walter J. Highman, New York: Dr. King-Smith's theme tremendously appeals to my imagination. That the actinic rays have a direct causative relationship to the production of lupus erythematosus is a familiar phenomenon. It is a disease of internal causation in the final analysis, and naturally it is the skin that has to be present for the lupus erythematosus to show. I believe that this perceptible feature, the nature of the disease, and the fact that it should stop at all in some cases are matters we have to consider in the medicine of the future in relation to etiology. Etiology is never a matter of one factor, and I regard Dr. King-Smith's paper as valuable in forcing to our attention the presence of other things than the actinic rays in producing lupus erythematosus.

Dr. David King-Smith, Toronto: I think the actinic rays are only one of the factors in the causation of the disease.

TREATMENT OF NEUROSYPHILIS BY MALARIA

FURTHER OBSERVATIONS *

PAUL A. O'LEARY, M.D.
WILLIAM H. GOECKERMAN, M.D.
AND
STEPHEN T. PARKER, M.D.
ROCHESTER, MINN.

In May, 1925, we reported the first year's observation of thirty-five cases of neurosyphilis treated with malaria,[1] as suggested by Wagner von Jauregg.[2] At that time we did not draw conclusions but attempted only to report our brief experience with the method. Some of the patients had shown such definite improvement one or two months after the course of malaria that a summary of the results was included, but we made no effort to interpret their significance. We felt that conclusions should be drawn only after treating a larger series of patients and observing them for several years.

In this paper we shall report the second year's observations on the original thirty-five patients treated (first group) and add sixty-five additional cases (second group) in which treatment has been given during the year just past. The bulk of this report will be the result of the continued observations on the first group.

We believe that it is pertinent to interpret our conception of what constitutes a successful result in the treatment of early general paralysis, and at the same time to endeavor to convey the basis on which we have formed our estimate of the results reported here. No doubt every physician who has dealt with general paralysis will agree that a period of years must elapse before deductions are made from a new method of treatment; also, that in a disease which produces extensive destruction

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* From the Section on Dermatology and Syphilology, Mayo Clinic.

* Read at the Golden Anniversary Meeting of the American Dermatological Association, Philadelphia, May, 1926.

1. O'Leary, P. A.; Goeckerman, W. H., and Parker, S. T.: Treatment of Neurosyphilis by Malaria: A Preliminary Report, Arch. Dermat. & Syph. **13**: 301-320 (March) 1926.

2. Wagner von Jauregg, Julius: Ueber die Einwirkung fieberhafter Erkrankungen auf Psychosen, Jahrb. f. Psychiat. **7**:94-131, 1887; Ueber die Behandlung der progressiven Paralyse, Wien. med. Wchnschr. **59**:2124-2127, 1909; Ueber die Einwirkung der Malaria auf die progressive Paralyse, Psychiat.-neurol. Wchnschr. **20**:132 and 251, 1918-1919. Ikhtemann claims the priority of malaria therapy for Rosenblum. Ikhtemann, M.: Rosenblum's Priority for Malaria Treatment of General Paralysis, Ann. d. mal. vén. **20**:561-565, 1925.

in nervous tissue, which we know has little, if any, regenerative power, it is folly to speak of cure even in the most liberal sense of the word.

In the treatment of general paralysis, we believe that much has been accomplished if the system of treatment is capable of arresting the progress of the disease or of putting the patient in remission. In our interpretation of the results reported in this paper we have taken the attitude that the elements in the nervous system which have undergone degeneration will not be restored or rejuvenated by this form of therapy. We do not feel that one should expect the disappearance of the outstanding signs of general paralysis from fever therapy, but after two years' experience it seems justifiable to attempt to evaluate the possibility of arresting the progress of the disease and to interpret the significance of the remissions produced, while still expecting each patient to continue to evince residual signs of the disease.

In a recent report on the further observations of the effect of tryparsamide on neurosyphilis,[3] we emphasized the fact that any method of treatment has a definite place in the armamentarium of the syphilologist if it maintains or restores the earning capacity of the patient with general paralysis; if, being unable to resume his former occupation, which was of a mental type, the patient with general paralysis is able to provide for himself and family by more menial work, or, if the treatment has produced a greater number of remissions than would have occurred spontaneously.

It may thus be seen that we have based our interpretation of what constitutes a successful form of treatment for general paralysis on the amelioration or disappearance of the symptomatic complaint and not on the objective signs; and until years of continued observation, with opportunities for study of microscopic changes on this and similar groups of cases, impress us with the ability of malaria therapy to restore damaged tissue in general paralysis, we shall endeavor to maintain the same criteria in estimating the value of fever therapy.

CLINICAL RESULTS IN THE FIRST GROUP (TABLE 1)

General Paralysis.—Last year it was reported that two months after the completion of the course of malaria, remissions occurred in six cases (25 per cent) of the twenty-four of general paralysis, and definite improvement in nine cases (37 per cent). This same group, observed for the year just past, now shows nine patients (41 per cent) of the twenty-two who survived, with complete remissions, and nine patients (41 per cent) definitely improved in one way or another. All cases which were in complete remission at the time of the report have remained so. No patient has suffered relapse clinically, while several who showed

3. O'Leary, P. A., and Becker, S. W.: Further Observations on the Treatment of Neurosyphilis with Tryparsamide, M. J. & Record **123**:305-308. 1926.

only "slight improvement" immediately after the course of malaria (two months) are now in remission. In other words, three patients who were previously reported as improved are now in remission, and three patients who were not heard from or were reported as not benefited are now in the "improved" group. Although the increase in the number showing remission is small, the outstanding feature is that there has been a relapse in none of the cases which were reported in remission last year; in all the remission has been maintained for more than eighteen months and continued improvement has been shown; moreover, there has been continued improvement in the patients of the "improved" group.

The neurologic reexaminations have shown no changes in the objective results, but, in the group in which we believe complete remission has occurred, the neurologists have recorded that it is now impossible to make a conclusive diagnosis of general paralysis. As noted in our first report, the outstanding improvement has been in the somatic complaints; restoration in part of personality; loss or reduction of irrita-

TABLE 1.—*Results in the Original Group of Patients with General Paralysis*

	1924 (24 Cases)		1925 (22 Cases)	
	Patients	Percentage	Patients	Percentage
In remission	6	25.0	9	41.0
Improved	9	37.5	9	41.0
Not benefited	3	12.5	2	9.0
Status unknown	4	17.0	1	4.5
Died	2	8.0	1	12.5

bility; reduction of tremors; improved speech; increase in tone and expression; better demeanor; increase in strength; a gain over former weight, and a decided improvement in insight and ability. Restoration of memory has been marked in the patients of fair education, while in a few it has been but slightly influenced. On the whole, in the agitated type of general paralysis improvement has been more marked. Although the speech difficulties, impaired memory and tremors, especially about the mouth, have shown improvement, practically all of the patients presenting these phenomena still manifest residual symptoms aggravated by stress or excitement. The increase in libido and potentia in three instances has been a considerable burden to the consorts.

Of the remaining six cases (25 per cent) in which no improvement followed the malaria therapy, there was no improvement in two and the course continued unfavorable; three patients have died (one additional since the first report), and one patient has not been heard from.

Optic Atrophy.—Of the three patients with optic atrophy in this group, vision seems to be stationary in two, while in the third there has been slight progressive loss of vision, much slower, however, than before the treatment with malaria was given.

Gastric Crises.—The patients with gastric crises and persistent "lightning pains" in the legs have not been reexamined by us, but they report that they are much improved and have been free from attacks for eleven and nine months, respectively.

Asymptomatic Types.—In the cases of paresis sine paresi and asymptomatic neurosyphilis there have been no outstanding changes, although there has been continued improvement in all phases of the spinal fluids.

Serologic Results.—The serologic studies in the series of thirty-two cases are somewhat more encouraging now than at the time of the first report, when we noted practically no changes in the blood or spinal fluid. In twenty-three of the original thirty-two cases, the spinal fluid has been reexamined within the last four months; in three of these the spinal fluid has completely reversed to negative in all counts. In only one of the two patients with general paralysis has a complete remission occurred. In all of the remaining nine cases there was a reduction in the positiveness of the Wassermann test, a reduction in the cell count or a maintenance of the low cell count and a tendency for the colloidal benzoin to be present in zone 2, or in the mixed type. The outstanding feature in this phase of the study is that none of the patients reexamined from fourteen to twenty-two months after the course of malaria has shown serologic relapse. The blood Wassermann test has become negative in eight cases following treatment with malaria.

Untoward Results of Treatment.—There have been no instances of recurrence of the malaria nor any complications from the malaria other than those of a transitory type noted immediately following the course of fever. Similarly, the slight aggravation of syphilitic complications has been temporary. Three of the first thirty-five patients treated have died; two mentioned in the first report (one of whom died in convulsions as a result of the malaria and the other, six months after the course of malaria), and the third two weeks after the malaria was stopped, from erysipelas with terminal bronchopneumonia.

CLINICAL RESULTS IN THE SECOND GROUP (TABLE 2)

The second group includes sixty-five cases in which inoculations with malaria were given between March 1, 1925, and Feb. 1, 1926, and consists of thirty-four cases of general paralysis; six of taboparesis; eleven of paresis sine paresi or the asymptomatic type of general paralysis; two of asymptomatic neurosyphilis, and eleven of tabes dorsalis, in two of which there were gastric crises, seven optic atrophy of the primary type, one progressive tabes, one persistent "lightning pains" with negative serologic interpretations, and one unclassified neurosyphilis. This second group is included in this report to record the observations made during the course of fever rather than to make further deductions as to

the value of the treatment. In passing, however, it is well to note that the percentage of remissions in cases of general paralysis in this group is a trifle higher than in the first group when reported at a corresponding time last year.

Death has occurred in five cases in this series; in one, death was sudden, and no cause was found at necropsy; in one it was due to diphtheria; in one to suicide a month after the course of malaria; in one to progressive general paralysis and in one to pneumonia. The complications attributable either to malaria or to syphilis in this series have been transitory and of no material consequence, because of our increased experience and the value of studying the blood urea as an index of toxemia.

There were only two cases in this group in which we were unable to produce malaria. Repeated inoculations with the blood of different "fever-donors" were of no avail, but in only one of the two cases was it possible to inoculate two strains of the plasmodia without producing

TABLE 2.—*Results in Other Forms of Neurosyphilis*

Diagnosis	Cases	Much Improved	Improved	No Change
Paresis sine paresi	4	..	..	4
Asymptomatic syphilis of the central nervous system	3	..	..	3
Optic atrophy	3	..	2*	1
Persistent lightning pains	1	1	..	..
Gastric crises (complicating)	2	2	..	..

* Vision stationary.

fever or chills with either. In both cases the plasmodia were recovered as long as three weeks after the inoculation, but no rigors developed. There were two other patients in whom the malaria was aborted after the fourth and sixth chills, respectively. In all four cases it would seem that individual resistance to the plasmodia was the factor, rather than the lack of virulence of the plasmodia, because transfer inoculations into recipients from these patients were successful. Thus far we have used four different strains of *Plasmodium vivax,* and in more than half of this group of sixty-five cases inoculation has been successful with the third strain. We have noted no material difference in the therapeutic effect of the various strains nor any increase in the virulence of the plasmodia due to repeated inoculations. Our efforts to reinoculate for a second course of malaria have been unsuccessful in five instances, the intervals varying from eight to fifteen months after the first course of malaria.

CARDIOVASCULAR SYPHILIS

In the series of 100 cases in which malaria therapy was used, clinical evidence of cardiovascular syphilis was found in only five. We have adopted a special cardiovascular examination as a routine measure for all candidates for treatment with malaria. Of the six cases of the entire

series that have come to necropsy following malaria, five showed anatomic evidence of syphilitic aortitis which was not demonstrable clinically, but no evidence was found to suggest that the aortitis was a factor in death. During the first year we endeavored to select the cases so as not to inoculate in the presence of visceral complications of syphilis, but during the last year we have been less cautious and have purposely included some which showed evidence of syphilitic aortitis without appreciable myocardial injury. There has been no evidence that the malaria has had a deleterious influence on the heart or aorta, nor has any material benefit to either of these structures, as a result of the treatment, been observed. Further observations, and particularly necropsy study, will be required before conclusions concerning this group can be drawn.

POSTMALARIAL THERAPY

Our impressions of the value of postmalarial antisyphilitic therapy have changed somewhat since the former communication. At that time we felt that the arsenical preparations, or mercury or bismuth, given immediately after the course of malaria, produced ill, rather than beneficial, effects. However, since that time our ideas have been modified so that we now recommend antisyphilitic measures three or four months after the malaria when the patient has completely recuperated from the attacks of pyrexia. Some of the various modern methods of treating neurosyphilis have been tried, such as intraspinal medication in combination with daily injections of mercury succinimide or with bismuth; tryparsamide has also been used with bismuth intramuscularly. Deductions as to the value of the different methods are not warranted at this time, although it appears that those who received intraspinal medication in conjunction with arsphenamine intravenously and bismuth intramuscularly progressed more favorably. This is in accord with the suggestion made by Purves-Stewart.[4]

SUMMARY

The continued observations on the thirty-five patients, treated by the fever therapy of Wagner von Jauregg and followed for a period of two years, has convinced us of the value of the method in the treatment of parenchymatous neurosyphilis, particularly of the general paralytic type. It also suggests that some of the complications of neurosyphilis, such as gastric crisis, persistent lightning pains and optic atrophy, will be ameliorated by fever therapy. There has been a mortality of 8 per cent in the 100 patients treated, of which five deaths (5 per cent) may be attributed, directly or indirectly, to the malaria.

4. Purves-Stewart, James: The Treatment of General Paralysis, Brit. M. J. 1:508-510, 1924.

Although there has been a slight increase in the number of remissions produced during the second as compared with the first year, the outstanding feature of the study has been that thus far none of the patients who were improved has shown any evidence of relapse, but all have continued to improve. Also, there has been a reduction in the degree of positiveness of the serologic tests of the blood and spinal fluid in the group as a whole. The outstanding serologic observation has been the absence of serologic relapse in any of the patients reexamined. Our experience has taught us to favor the use of the present-day antisyphilitic remedies three or four months after the course of malaria, based on the observation that those patients who received intraspinal treatment, for example, after the course of fever, have shown better clinical and serologic results than those who did not.

We believe that some of the therapists who have been disappointed in the fever therapy of Wagner von Jauregg are discouraged because the signs and symptoms of the advanced phases of the disease and the result of actual destruction of tissue have not been obliterated. We have not anticipated such phenomena but have been encouraged by obtaining definite symptomatic benefit. In our previous communication, it was pointed out that the patients with general paralysis were in the early phases of the disease, and not far enough advanced to warrant institutional care.

We are now more enthusiastic about the results of the treatment with malaria than we were last year. Our past experience, however, with the treatment of neurosyphilis, particularly early general paralysis, prevents us from making conclusive deductions at this time of the value of the method. A more extended trial with frequent observations is warranted by the results thus far obtained.

DISCUSSION

Dr. Jay Frank Schamberg, Philadelphia: I have been much interested in Dr. O'Leary's second contribution on this subject. Last September I visited Vienna and was privileged to see through the courtesy of the late Professor Kyrle, many of the history records of cases of syphilis treated by malarial inoculation. He was treating all stages of syphilis by this method, as a routine, giving the patients a dose of 0.6 Gm. of neo-arsphenamine before the malaria inoculation and six doses afterward. The patients were then kept under observation without further treatment for some years. I was much struck by a series of charts handed me at random of various cases of asymptomatic cerebrospinal syphilis which had been vigorously treated for years without much effect on the serologic reactions, which, following malarial inoculation, became negative or almost so in from six to nine months. Kyrle told me that he had treated 1,500 patients with all types of syphilis by the new procedure and could count the number of relapses on the fingers of one hand.

With the aid of one of my associates, Dr. Greenbaum, we have carried out malarial inoculation in more than fifty cases, with most happy results in a good proportion. One of the most striking cases was that of a man, aged 35, with

pronounced clinical and serologic general paralysis who was so violent that he had to be strapped in bed. Immediately after his treatment a complete remission occurred and for a year he has been back at his usual vocation, giving complete satisfaction in his work. Many neurologists would doubtless say, "We have had remissions before, some spontaneous and some under other treatments," but these are quantitatively and qualitatively different from those of malaria. Kirschbaum of Hamburg has shown that whereas spontaneous remissions occur in from 8 to 15 per cent of cases, remissions after malaria occur in from 25 to 40 per cent. The remissions after malaria are more pronounced and of much longer duration. How long they will last we do not know yet. Of nine patients with general paralysis treated by Wagner von Jauregg in 1917, the disease in three is still in remission, and the patients are back at work. About the same proportion of remissions has been reported by Nonne of Hamburg and others. To be sure, the results are better in relatively recent cases than in old, long-standing cases of general paralysis.

As to fatalities, we have been particularly fortunate, having only one death in fifty cases. We have had some cases of tabes dorsalis with severe gastric crises in which remarkable benefit occurred. Cases have been reported abroad in which ataxia virtually disappeared, and likewise the Argyll Robertson pupil. Such cases are, to be sure, exceptional.

While the time has not yet arrived to evaluate accurately the malarial treatment of syphilis and discount the enthusiasm that is commonly engendered by new treatments, malarial inoculation has accomplished results in syphilis of the nervous system not heretofore achieved by other methods of treatment.

Dr. Samuel E. Sweitzer, Minneapolis: Dr. O'Leary furnished me with some malarial blood last year, and since then I have treated for syphilis a small series of patients who had positive reactions. In this small series I have been struck with the marked improvement that has occurred in patients who had general paralysis. Many of the patients have been able to go back to work. I have also noticed improvement in the tabetic cases.

In the twenty-five cases we have had two deaths. I thought there were going to be no deaths, but these two occurred in the same week. One patient was tabetic and not in good general health; I was not surprised when he died, for he was weak when he entered and his condition far advanced. The other patient was a woman who evidently had a lighting-up of an old gallbladder infection. She was taken ill with severe vomiting and enormous swelling of the parotid gland. We gave quinine intravenously, but she died.

Dr. Udo J. Wile, Ann Arbor, Mich.: I should like to know whether in the two cases in which Dr. O'Leary was unable to produce malaria, and in which the parasites were found in the blood, any clinical improvement took place. I think the answer would show whether the malaria or the fever is the outstanding factor in producing the change. If the patient could have malaria without chills, it would indicate that the disease itself rather than the fever was conferring some immune substance.

Dr. Harold N. Cole, Cleveland: I have been interested during the last year in talking with some medical missionaries from Persia, where every one has malaria, and some from China where it is prevalent, and in both countries syphilis is an exceedingly common disease. In both instances the men told me they saw few cases of syphilis of the central nervous system. This has been quoted before in this connection.

I have been using malaria inoculation for more than a year, and have treated from ninety to one hundred cases. I am attempting to treat more patients who

have cerebrospinal syphilis and tabes, and fewer who have advanced general paralysis. These patients are poor risks and patients who have cerebrospinal syphilis and tabes stand the treatment better. There have been some striking results. One public accountant who was completely disabled was treated and is now back at work. We all know how exacting this occupation is, and in this case complete remission has occurred. I have had good results in tabetic crises, particularly of the gastric type. In two instances the crises were so severe that they could not be controlled with morphine. Both of these men have been free from the disease for from eight to ten months, and in one case, although there has been no change in the pupils; the patient has an entirely negative cerebrospinal fluid and blood Wassermann reaction, and is working every day. There have been other cases of the same type. There is no question about the bad symptoms and intoxication from malaria, and I lay great stress on the blood pressure. I agree with Dr. O'Leary about the urea, but I think the blood pressure is important. When it goes down to 90, I watch the patient closely, for I have seen sudden collapse in a short period, and a patient may die in two hours. In one case of that type the patient's life was saved by means of transfusion. This is probably an indication that the fever should be stopped, and it is easy to do. Two doses of quinine are given, the temperature drops, and the patient responds to this therapy and makes good progress.

I think the malaria therapy is here to stay, and is of value. Of course, it should be carried on only under the best conditions, when we can follow the patients and study them closely; but under these conditions it seems to offer something we have lacked thus far.

Dr. Harry E. Alderson, San Francisco: From hearsay evidence I can corroborate what Dr. Cole has said. One of my associates, Dr. Stratton, spent some time in Central America recently, and from conversations there he gained the impression that syphilis of the central nervous system was rare there. We have a good many Mexican and Central American patients with syphilis in San Francisco, and the incidence of cerebrospinal syphilis is just as high as that among other nationalities, but there is practically no malaria.

Dr. Sigmund Pollitzer, New York: I think we need not go to Persia, China, and South America for statistics. It is well known that among the negroes of our southern states syphilis of the central nervous system is decidedly rare. Several years ago it was said to be unknown. This was an exaggeration, but it is well known that these negroes who live in the malaria zone, and in whom numerous plasmodia are formed, are practically free from syphilis of the central nervous system.

Dr. Charles C. Dennie, Kansas City: I live in Missouri, where we have many negroes and no malaria, but we have no syphilis of the central nervous system among the negroes.

Dr. Paul A. O'Leary, Rochester, Minn.: I am pleased to hear other favorable reports of the malaria treatment. We have been conservative in our reports, but in reality we are more enthusiastic than this review would indicate. The reports given here today seem to confirm definitely those from Europe; in fact, it is worthy to note that all the recorded experiences in the literature are favorable, and I have yet to find any one who has had an experience of more than an occasional patient treated by malaria who has not been impressed with its value.

I think the point made by Dr. Schamberg regarding remissions is pertinent. I have estimated the reported results in the literature and find that the disease in an average of 30 per cent of the patients treated is in remission. Our estimate is

a trifle higher, possibly because of the fact that all our patients were seen early in the course of the general paralysis and when it was not far enough advanced to require institutional treatment.

We have not been particularly struck with the value of the treatment in the tabetic patient, although Nonne has reported that 30 per cent of the group he treated were definitely improved. Our tabetic patients with negative reactions of the spinal fluid, complicated with gastric crises, persistent lightning pains, and optic atrophy, derived considerable benefit from treatment.

Dr. Wile's question arouses a discussion as to the mechanism by which the results are obtained. We had one patient in the first group in whom we were unable to produce chills and fever although the plasmodia were present, whose progress after discharge was poor. He had a series of convulsions and died several months later. We have noted five patients in the entire series who showed plasmodia in the blood but no febrile reaction. It was necessary to administer quinine before discharging them from the service, and no particular improvement nor harm from the inoculation has been noted.

We are satisfied that better results are noted in the patients who develop severe reactions. The higher and more persistent the fever and the longer the chill, the more pronounced are the results. It does not seem at this time that we can attribute the benefits to any one single factor. There may be a biologic reaction between the plasmodia and the spirochete, but circumstantial evidence is accumulating which suggests that the temperature is one of the prominent factors in producing the results.

The question has been raised about the male gamete. We have felt that the inoculation type of malaria was easily controlled by quinine because in addition to its being an acute type, the gametes were also absent. We have looked and looked, and been unable to find them. However, a protozoologist who visited the clinic recently informed us that our inability to demonstrate the male gamete was a reflection on our technic and knowledge of the organism. Unfortunately for him, he could not demonstrate them either. It has been suggested that by transferring the plasmodia through a mosquito the organisms would become more virile. However, several European writers have not noted any increase in virulence when the patient was inoculated with an infected mosquito.

The number of chills the patient is permitted to endure is of some importance. Our patients have averaged nine attacks of pyrexia, but we prefer to let them have fourteen if their condition warrants it. Those in whom we have stopped treatment after the sixth chill have not done as well as those receiving the full course.

Regarding priority in the therapeutic use of malaria, I think it is well to mention that Rosenblum reported on the benefit of fever therapy in general paralysis in 1874, and it has been suggested that it be called the Rosenblum von Jauregg rather than the Wagner von Jauregg treatment.

THE TREATMENT OF PRURITUS ANI BY ELECTRIC IONIZATION *

EVERARD LAWRENCE OLIVER, M.D.

BOSTON

HISTORY

Professor Leduc [1] of Nantes, France, was the first to utilize ionization for therapeutic purposes. He discovered the laws regulating its application and also the properties of the ions of many substances. Lewis Jones was the first English exponent of ionization therapy in various conditions.

DEFINITION

According to Friel,[2] the term ionization is especially applied to the form of treatment which consists of the introduction into the tissues, by a current of electricity, of one or other of the constituents of those chemical compounds known as salts.

When a salt is dissolved in water, a portion of it splits into its acid and basic groups of radicles. Each of these has an electric charge and is called an ion. For example, common salt, sodium chloride, splits into sodium which is a basic ion and chlorine which is an acid ion. The basic ions are always positively charged while the acid ions are negatively charged. Bodies which are positively charged will attract ions with a negative charge. The usual method of attracting the ions by oppositely charged bodies is to place in the aqueous solution of a salt, wires attached to the positive and negative terminals of an electric battery. The ions then move toward the electrodes, the positive ions moving toward the wire attached to the negative pole and the negative ions toward the wire attached to the positive pole. It was owing to this movement of the charged radicles that Faraday called them ions, which means travelers.

Ions are not formed when a salt is dissolved in alcohol, glycerin or ether. Water is necessary for the formation of ions. As the tissues of the body contain water and various salts in solution, a portion of them in ionic form, it is evident that an electric current passed through the body will cause a movement of ions, the positively charged ion toward the negative pole and the negatively charged ion toward the positive

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* Read at the Golden Anniversary Meeting of the American Dermatological Association, Philadelphia, May, 1926.

1. Leduc, Stephane: Electric Ions: Their Use in Medicine, Trans. by R. W. McKenna, New York, Paul B. Hoeber, 1908.

2. Friel, A. R.: Electric Ionization, New York, Wm. Wood & Co., 1920.

pole. It also follows that if a pad connected to one pole of the battery is moistened with a solution of a salt and placed on the skin, and an electrode connected to the other pole is placed elsewhere on the body, there will be a movement of ions into the tissues at one pole and out from the tissues at the other.

Professor Leduc's classic experiment with rabbits demonstrates that this movement of ions does actually occur, and that the direction of this movement is dependent on the laws stated above. In this experiment, two rabbits with flanks shaved were placed side by side. To the inner flank of each was applied a pad moistened with sodium chloride solution, and to the outer flanks were attached pads moistened with a solution of nitrate of strychnine. In one rabbit, the positive pole was connected to the sodium chloride pad and the negative pole to the strychnine pad; in the other rabbit, the poles were connected in the opposite manner. After a few minutes, the rabbit in which the positive pole was attached to the strychnine pad developed convulsions and died. The strychnine had entered at the positive pole, for the strychnine ions being positively charged were attracted toward the negative pole and flowed into the tissues. The other rabbit was unharmed. In a similar manner, antiseptic substances may be made to enter the tissues of the body.

It is generally conceded that in many cases of essential pruritus ani, the pruritus is due in a large measure to an infection of the perianal skin. Murray's [3] work led him to believe that *Streptococcus fecalis* was the causative organism. Others have been led to believe that the colon bacillus is of equal or greater importance.

Regardless of what organism is reponsible, if it is admitted that bacterial infection plays a leading part in a considerable proportion of cases of pruritus ani, ionization with antiseptic substances should theoretically prove of value, for by this means antiseptics do actually enter the tissues. Leduc [1] states, "trusting to clinical evidence it can be said that antiseptic ions can be driven in to a sufficient depth to make them valuable in combating infective conditions."

Rolfe [4] was the first in the United States to employ this method of treatment in pruritus ani, and it was his paper published in 1919 that attracted my interest in this therapeutic measure.

Since that time this method of treatment has been spoken of highly by many proctologists of standing, notably Dr. T. Chittenden Hill [5] who writes:

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3. Murray, Dwight H.: Etiology and Treatment of Pruritus Ani, J. A. M. A. **71**:1449 (Nov. 2) 1918.

4. Rolfe, W. A.: Treatment of Pruritus Ani by Ionic Medication, Boston M. & S. J. **181**:196 (Aug. 14) 1919.

5. Hill, T. C.: Manual of Proctology, Philadelphia, Lea & Febiger, 1923, p. 212.

This method which I have used for nearly three years has proved remarkably successful in many old and hitherto intractable cases. While not applicable to those cases, the etiology of which is dependent on some real coexistent rectal pathology, the removal of which will completely relieve the symptoms, I have found it promising above all other methods of local treatment and curative to a very satisfying degree in a disease so obdurate to treatment as pruritus ani.

Buie [6] of the Mayo Clinic read a paper in 1924 based on his results with this method in 100 cases. He states that 72 per cent of the patients obtained enough relief to repay them for the amount of time spent in treatments. Twenty-eight per cent of the cases are classified as failures, but in most of these the poor result was evidently due in his opinion to insufficient treatment. In only 10 per cent was there failure in cases in which he believed sufficient treatment had been given.

Montague,[7] in his book on "Pruritus of the Perineum," also makes favorable mention of this method of treatment (p. 133).

The apparatus which I employed is made for dentists, but was found satisfactory for use in treatment of pruritus ani. It consists of a small motor transformer which reduces the 110 or 220 volts direct current to 40 volts (for alternating current a motor generator which obtains a direct current from an alternating current supply should be used instead of the motor transformer) and a current regulator with a milliampere meter. The treatment is applied in the following manner: The patient lies on the side with thighs drawn up, a flat metal electrode 6 by 6 inches, covered with at least eight layers of gauze, moistened with normal salt solution, is slipped under the right thigh. Thus, the indifferent electrode, is attached to the negative pole if we are to make use of an electropositive element such as mercury, silver or zinc, and to the positive pole if we are employing an electronegative element such as iodine.

The active electrode consists of an oval, thin, copper plate which is bent longitudinally to make it fit the intergluteal fold about the anus. This is also covered with a pad of absorbent cotton or gauze saturated with the solution of choice. In most of my cases, the solution of choice has been 1 per cent mercuric oxycyanide, though in some cases 1 per cent of zinc sulphate or 1 per cent solution of iodine has been used.

The electrodes being in position and the current turned on, the button on the milliampere meter is slowly turned, using only 1 or 2 milliamperes of current at first and gradually increasing to 10 or more milliamperes. The current is allowed to flow for twenty minutes. The patient experiences a sensation of warmth and tingling, but no pain unless excoriations are present, when a milder current should be used.

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6. Buie, L. A.: Tr. Am. Proctologic Soc., Twenty-Fifth Annual Session, 1924.

7. Montague, J. F.: Pruritus of the Perineum, New York, Paul B. Hoeber, 1924.

The itching may be increased for an hour after the treatment, but there is often striking improvement the following day, even after the first treatment. The treatments should be given at least twice a week, if possible, though in some of my cases, cures were obtained when the treatments were given at weekly intervals. The patients were instructed to bathe with soap and water after each defecation and at night before retiring. As a rule, no other treatment was used. The patients were free from evident rectal disease; in other words, these cases might be termed essential pruritus.

AUTHOR'S CASES

Thirty patients were treated with ionization, nearly all with 1 per cent mercuric oxycyanide. To each patient was sent a card asking him to indicate his present condition by making a cross opposite one of the four lines:

Cured.
Much improved.
Slightly improved.
No improvement.

All of those to whom cards were sent had had their last treatment more than a year previously.

Of the thirty patients, seven, or 23.3 per cent, stated they were cured; ten, or 33.3 per cent, much improved; seven, or 23.3 per cent, slightly improved; six, or 20 per cent, no improvement. Of the groups showing slight or no improvement, eight of the thirteen had received four treatments or less each. As fewer than eight treatments is not a fair test of this method, perhaps half of this group would have belonged among the cured or greatly improved had they given the treatment a fair trial. As the figures stand, we have 56.6 per cent cured or much improved, which might possibly have been raised to 75 per cent or over, if the patients who obtained poor results had been more persistent.

The age of the patients seems to make little or no difference in the success or failure of the treatment. The most strikingly successful case was that of a physician, aged 45, who had suffered severely from pruritus ani for thirty years. He had lost much sleep, waking up four to six times almost every night. He said he did not know what it was to sleep through a whole night. He had received only six treatments, was cured, and had had no relapse during the past five years.

CONCLUSIONS

As the number of cases here reported is so small, I do not feel justified in making positive statements as to the value of ionization in

the treatment of pruritus ani. Results in the cases reported, however, are similar to those reported by several others, therefore I feel that this method of treatment deserves a trial in those cases of pruritus ani which have proved resistant to the more usual methods of treatment. It is not proclaimed as a sure cure, but as an additional therapeutic measure in the fight against this distressing malady.

DISCUSSION

DR. SAMUEL E. SWEITZER, Minneapolis: I should like to know where Dr. Oliver obtains his mercuric oxycanide, and what brand he uses. There has been difficulty in obtaining it in our vicinity.

DR. WILLIAM ALLEN PUSEY, Chicago: There is an interesting historical point in the matter of introducing drugs into the skin by the electric ionization method. Attention was called to this method, certainly as far back as 1890, and a good deal of interest in it was aroused, but it did not retain its hold on the profession as a useful method. I am glad that Dr. Oliver has called attention to it; it has undoubtedly possibilities of usefulness.

I am somewhat skeptical about the reason that Dr. Oliver suggests for its usefulness in pruritus ani. The treatment is based on the assumption that pruritus ani is due to a bacterial infection and that therefore driving in antiseptics should clear it up. I have never been convinced of the specific bacterial character of most of the cases of pruritus ani. My impression is that it is due in most cases to the chemical irritation of fecal matter, and that one of the main points in the treatment of the cases is scrupulous care in keeping the anus clean. This is very difficult to do except with intelligent, careful patients. The important instruction that I give is to wash with a soft rag as soon as possible after defecation; to let nothing interfere with the cleaning of the anus at the earliest possible moment. This may be getting rid of *Bacillus fecalis,* but it is to my mind more the getting rid of the many active substances in the feces that irritate the skin.

DR. FRED WISE, New York: Did Dr. Oliver ever use the electric current in these cases without the employment of a chemical? It seems to me the current alone might be responsible for the results obtained.

DR. H. E. ALDERSON, San Francisco: In the few cases in which local treatment will reach the seat of the trouble, no doubt this method of therapy will be beneficial, and there are some cases in which bacteria, I believe, represent the main etiologic factor.

I would like to speak a word for carbon tetrachloride. We use this a great deal now where alcohol formerly was useful. Carbon tetrachloride is excellent for cleansing purposes. When applied to the anus, it produces some smarting, but this does not last long. It penetrates all the little creases, crypts and follicles in the skin and dissolves the secretions.

It also has a parasiticidal action, so we can give the patient a thorough cleaning while we are killing the organisms on the surface. Many of my patients are able to derive great comfort and relief by this method.

DR. HENRY J. F. WALLHAUSER, Newark, N. J.: For many years I have used a 1 per cent ointment of yellow mercuric oxide applied once a day, preceding the application by bathing with sodium biborate, a tablespoonful in a quart of water. This simple plan has succeeded in relieving all patients that have come under observation. Patients that had an added pathologic condition were referred for surgical treatment, but even in these cases the pruritus disappeared.

DR. DAVID KING-SMITH, Toronto: I feel that some of these cases will not respond satisfactorily to any local treatment. In many cases the patient needs building up. If possible, a change of surroundings or a good holiday in the woods or a sea voyage will prove most beneficial.

DR. RICHARD L. SUTTON, Kansas City, Mo.: I was much interested in Dr. Oliver's paper, and will give his method a trial. One of our English colleagues has done a lot of work on the ionization method, and I should like to have Dr. Gray's opinion regarding it.

DR. SIGMUND POLLITZER, New York: I agree that each patient should be treated according to the merits of his case, for pruritus ani is a symptom and not a disease.

DR. E. LAWRENCE OLIVER, Boston: I obtained the mercuric oxycanide from my druggist without any difficulty. He made up a 1 per cent solution, and it works well.

Answering Dr. Pusey, I do not know why the method is not more widely used, but perhaps it is because it is a rather tiresome method for both physician and the patient. It needs perhaps $100 worth of apparatus, and many do not wish to bother with it unless they are convinced that it is of considerable value. Just how much value it possesses I do not know, but these cases suggest that it certainly has some value.

Answering Dr. Wise, that the electric current might do just as well without drugs, I think that is the way they felt in St. Bartholomew's Hospital in London. There Dr. Cumberbatch was using salt solution and reversing the current occasionally. He regarded the current as the main thing in all cases in which he used ionization, and not the drug.

It may be that the cleanliness was a large factor in some of these cases, but many of the patients had been using those methods for years on the advice of their physicians and had not obtained results until ionization was used. I think undoubtedly it disposes of some of them.

I agree with Dr. King-Smith that the general health is an important factor. These cases were not selected but taken as they presented themselves when no particular cause could be found for the trouble. I did not make any particular bacteriologic investigation, but simply accepted what had been done by others in this line.

CORRECTION

In an article by Dr. Henry E. Michelson, Minneapolis, entitled "Granuloma Pyogenicum," in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, October, 1925, the author mentioned that in 1904, Dr. Hartzell first named the condition under discussion. He now states that his attention has been called to the fact that the name was first used by Dr. Crocker in his third edition, dated Dec. 21, 1902.

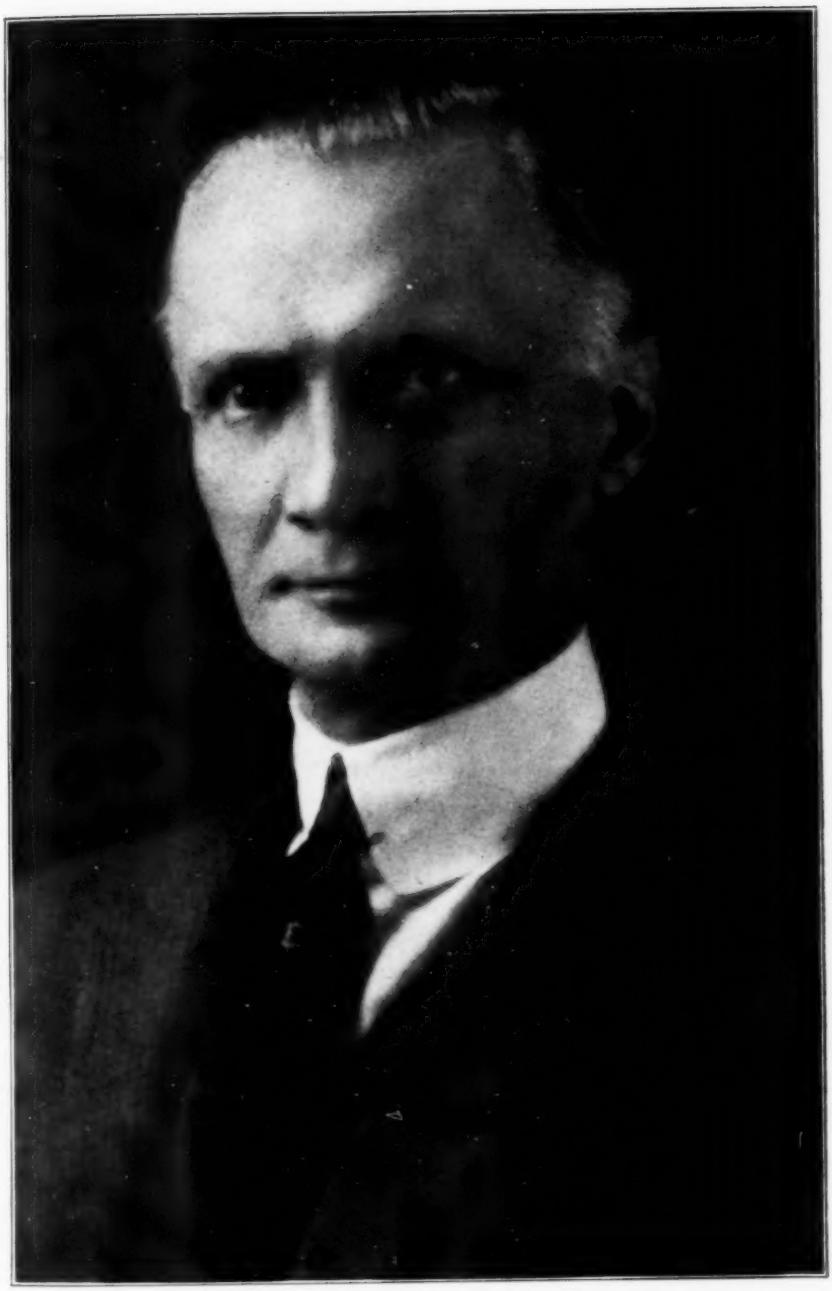
Obituaries

WILLIAM BURWELL TRIMBLE, M.D.
1870-1925

During the last year in the United States the specialty of dermatology has lost some of its leading teachers and most active workers. In this group is here recorded the name of Dr. William B. Trimble, who died of coronary thrombosis on May 23, 1925.

Dr. Trimble was born in Montgomery, Ala., Sept. 27, 1870. He attended the academies of Professor McClennan and Professor Thomas in that city and later entered the University of Virginia to study medicine. He completed his medical education at the New York University, where he received the degree of Doctor of Medicine in 1891. On graduation he served as extern at the Chambers Street Hospital until the beginning of a full term of intern service at the Gouverneur Hospital, New York. He was later appointed assistant surgeon at this hospital, serving on the staff of the late Dr. James Kelly. About this time he was made an instructor in surgery at the New York University. A few years later, becoming interested in genito-urinary disease, Dr. Trimble joined the staff of the New York Post-Graduate Hospital as chief of clinic of the genito-urinary department. At this time syphilis was treated by this department and the frequent occurrence of the skin manifestations of syphilis soon awakened his interest in dermatology. He then became connected with the service of Dr. George Henry Fox at the New York Skin and Cancer Hospital and transferred from the position of chief of clinic of surgery to that of chief of clinic of dermatology and syphilology at the New York University. On the resignation of the late Dr. John A. Fordyce in 1912, Dr. Trimble was appointed to the chair of professor of dermatology and syphilology at the New York University. In this year Dr. Trimble was also appointed visiting physician to the New York Skin and Cancer Hospital. On the recent establishment of a dermatological service at Bellevue Hospital he was made attending physician to this department.

In the thirty-four years of the practice of medicine spent by Dr. Trimble in New York, there was a continuity of service in one institution or another in either minor or major rank. Like most trained dermatologists, Dr. Trimble was an acute observer and was endowed with a splendid memory for details. He could visualize years after the presentation of cases, without reference to memoranda, not only the elements of a skin picture but the names and opinions of those others



WILLIAM BURWELL TRIMBLE

1870-1925

present on the occasion. The energy and enthusiasm shown in his private practice, as well as in his teaching and hospital work, remained with him to the end.

Dr. Trimble was a forceful and successful lecturer in the class room, and the undergraduate students when turned over to his assistants for section class work were always well grounded clinically. Dr. Trimble's desire to impart knowledge of dermatology to his students and clinical associates was his hobby.

Nurtured on hard work, faithful to his duties and responsibilities, he spared himself little and looked for and appreciated a like response from his assistants. In his relations with his faculty confreres, clinical associates, undergraduate students and private and clinic patients, Dr. Trimble's personality emanated the qualities of unaffected camaraderie, sincerity, wholehearted loyalty and professional efficiency with always the saving sense of humor.

Dr. Trimble, although not of robust health, was physically active and athletic. As a young man he was a boxer of considerable ability and as an amateur ball player displayed promise sufficient to have received offers to join one of the prominent teams of the Southern League. He was an enthusiastic follower of the national game all his life. Of late years, his interest lay in his home and his professional work, and he allowed himself but an occasional indulgence in golf.

During the past Dr. Trimble devoted much time to dermatologic photography and had a complete set of photographs and lantern slides of the skin manifestations of syphilis, of skin tuberculosis and of the various malignant cutaneous affections. His contributions to the literature of his specialty embrace reports, observations and clinical studies as a reflection of the abundant clinical opportunity and material provided by the active institutions with which he was connected.

His medical society memberships comprised the American Medical Association, American Dermatological Association, New York Academy of Medicine (chairman of the Section on Dermatology and Syphilis, 1913 and 1914), New York Dermatological Society (president, 1910 and 1923), University of Virginia Medical Society, New York University Medical Society, Gouverneur Hospital Alumni Association.

Dr. Trimble is survived by his wife, nee Katherine Colvin, to whom he was married in 1904, and by his son, Richard.

JOHN J. ROTHWELL.

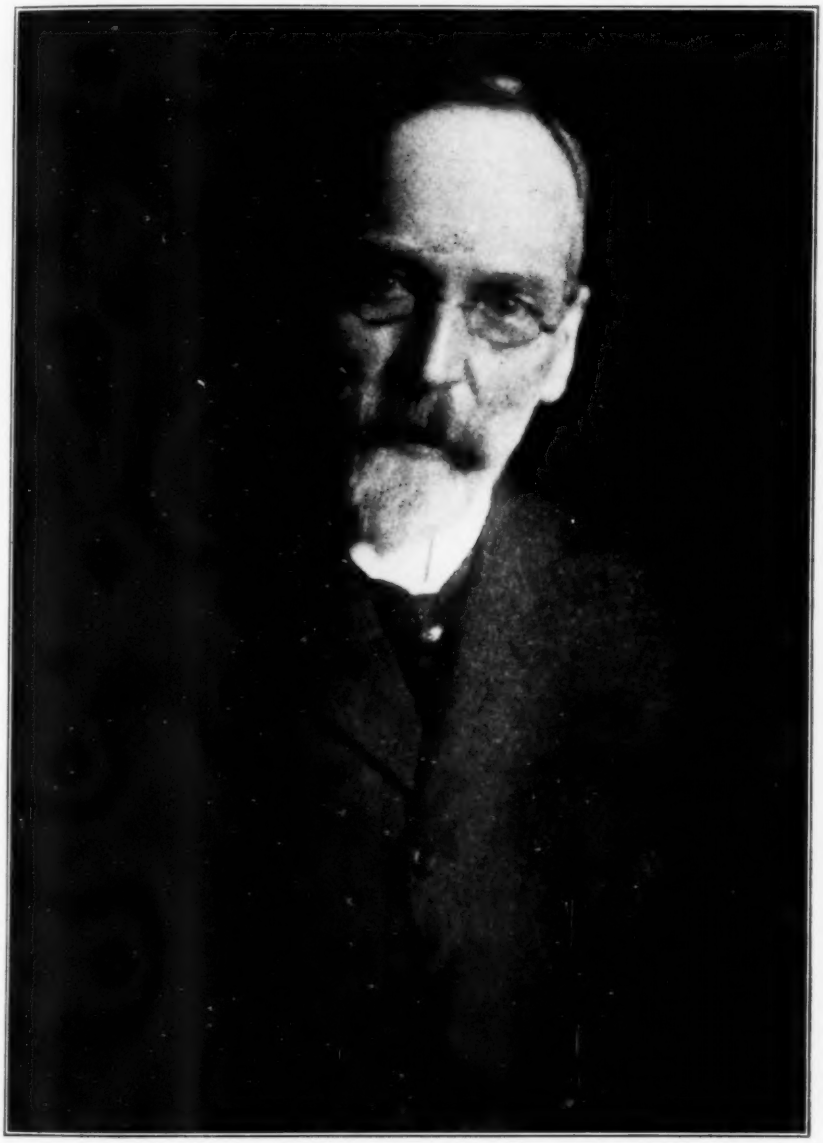
ALEMBERT WINTHROP BRAYTON, M.D.

1848-1926

American dermatology has lost another one of its pioneers in the West. Dr. Alembert Winthrop Brayton of Indianapolis, aged 78, died on September 21, as the result of a fall.

Dr. Brayton was descended from New York and New England ancestry. When he was 8 years old the family came to Illinois and settled near Chicago. His early education was obtained in the public schools. After he had completed his high school education, he entered the Cook County Normal School. Like so many other scholarly men, he devoted his first years after graduation to teaching. This whetted his taste for scholarship, and he then entered Cornell University where, after two years, he became a teacher of biology. For the next few years his life was largely given to field work in zoology. This was undertaken in cooperation with, and at the solicitation of, David Starr Jordan. During this time he obtained his degree of Bachelor of Sciences at Butler University; later, in recognition of his zoological work, he received the degree of Master of Science both from the University of Indiana and from Purdue University. In 1877, with Jordan and Charles Gilbert, he made an extensive survey of the fish of the southern Alleghany mountains for the United States Fish Commission. In this work twenty new species were discovered, described and published by Jordan and Brayton in *Bulletin No. 12 of the United States National Museum*. In 1878, they made a similar survey of the marine fish at Beaufort, N. C. About the same time, under other auspices, Dr. Brayton made a survey of the birds of Indiana. This resulted in the publication of "The Birds of Indiana" in the annual report of the Indiana Horticultural Society of 1879. It is still the authoritative work on the subject. In 1882, he contributed to the volume on zoology of the Geological Survey of Ohio, a "Report on the Mammals of Ohio," of 175 pages. Thus Dr. Brayton was not an amateur zoologist, but a productive professional zoologist of recognized standing. His life illustrates the catholicity of interests that characterizes the minds of scientific physicians.

While Dr. Brayton was doing all of this work in zoology, he was studying medicine. He took his degree in medicine at the Medical College of Indiana in 1879. Soon after that he was elected to a professorship, and from that time until his death he held a teaching position. From 1881 until his death he was professor in the Medical College of Indiana. The range of his knowledge, as shown by the subjects he taught, is interesting: chemistry, toxicology, medical jurisprudence, physiology, pathology, clinical medicine and, finally, dermatology.



ALEMBERT WINTHROP BRAYTON

1848-1926

He was always an active worker in general medical affairs. From 1892 until 1912 he edited the *Indiana Medical Journal,* which, under his guidance, became a useful organ of the medical profession of the state.

For a great many years his chief practical interest was dermatology. His trained powers of observation were well illustrated in his work in dermatology. He showed the first case of favus demonstrated in Indiana, the first case of xeroderma pigmentosum in Indiana and one of the first cases in the United States. He found a case of scabies norvegica. He had not had the advantage of intensive preparation in dermatology under experienced clinicians, but in spite of this he acquired a broad grasp of the subject and became an expert in the field. His contributions are records in the pioneer literature of American dermatology.

Dr. Brayton belonged to that group of physicians whose interest ranged over the whole field of the natural sciences, the group whose exemplar was John Hunter, and among whose number the foremost dermatologist was Jonathan Hutchinson. Brayton was a good example of this group.

His alert, vigorous mind was interested in all kinds of intellectual pursuits. He was genuinely fond of good literature. He had a taste for poetry, which he quoted delightfully. One of my pleasant memories is a personal card that Dr. Brayton once left for me on which he had written that quotation from Channing:

> I laugh, for hope has happy place with me,
> If my bark sinks 'tis to another sea.

Brayton was a scholar and a scientist, but, withal, a genial, happy personality who radiated optimism.

W. A. P.

JAMES MOORE KING, M.D.

1867-1926

Dr. James Moore King, prominent dermatologist of Nashville, Tenn., aged 59, died of cancer on October 12.

Dr. King, son of Charles Hays and Ann (Wood) King, was born at Murfreesboro, Tenn., Sept. 5, 1867. His preliminary education was obtained in the public schools, in Tennessee University and in Peabody College, from which he obtained his Bachelor of Science degree in 1896. He received his M.D. degree at the medical department of the University of Nashville in 1896. Dr. King served as professor of chemistry at his alma mater from 1896 to 1910; as professor of physics in the arts department of that university from 1899 to 1904, and as professor of dermatology and electrotherapeutics at Vanderbilt School of Medicine from 1910 to the time of his death. He was engaged in postgraduate study in London and in Paris from 1904 to 1906. Dr. King was a member of the Nashville Academy of Medicine and of the Middle Tennessee Medical Society, and was secretary of the section on dermatology and syphilology of the Southern Medical Association.

News and Comment

ALABAMA

Venereal Disease Clinic in Mobile.—The city, county and state contribute funds to operate a venereal disease clinic at the City Hospital, Mobile, where treatment is offered all persons who are unable to provide it themselves; in the annual report of the board of commissioners of the city of Mobile, it appears that 3,466 persons were treated at this clinic in 1925, 2,516 of whom were negroes. There were administered 10,391 arsphenamine treatments, 2,569 of which were to white persons. The total number of individual treatments given at the venereal disease clinic last year was 25,865.

CALIFORNIA

Suit Follows "Permanent Shave."—George Scott, a motion picture appliance manufacturer in Los Angeles, recently brought suit for $175,000 damages against Jules M. Marton, inventor of a so-called method of removing hair, it is reported. Scott claims that his face was injured when Marton gave him a "permanent shave." In 1924, Marton is reported to have pleaded guilty to violation of the medical practice act and to have paid a fine of $100.

CONNECTICUT

Clinical Congress of State Society.—The second clinical congress of the Connecticut State Medical Society will be held in Sprague Memorial Hall, Yale University, New Haven, September 21-23. Among the speakers announced is Dr. C. Morton Smith, Harvard University Medical School, who will speak on "Certain Phases of Congenital Syphilis."

FLORIDA

Postgraduate Course on Venereal Disease.—The state board of health conducted in June a short postgraduate course in Jacksonville for the study of venereal diseases in cooperation with the U. S. Public Health Service and the American Social Hygiene Association. Fourteen physicians from widely separated parts of the state took the course, and six physicians from Jacksonville. There were lectures, clinics and motion pictures. The Duval County Hospital provided the accommodation for these meetings.

MINNESOTA

Dermatologic Meeting.—The Minnesota Dermatological Society met, July 10, in Rochester; there was a demonstration of cases at the Worrell Hospital and a dinner at the Golf Club; Dr. Oliver S. Ormsby was the principal speaker.

NEW YORK

Smallpox and Unvaccinated Friends.—A case of smallpox developed in Tonawanda in Erie county about June 13 in a young woman who had recently returned from a visit in Ohio; a friend of this woman developed smallpox about June 30, and a second friend developed the disease about July 3; none of these three had ever been vaccinated. The state commissioner of health says that a young man recently contracted smallpox and all members of his family

were immediately vaccinated, except an elder brother, who was a conscientious objector; this brother developed one of the most severe cases of smallpox seen in the state for some time; his face was covered with pustules, and so swollen that his eyes were nearly closed. All the other members of this family escaped the disease. There were forty-three cases of smallpox in New York last month. A conductor on a passenger train running between Buffalo and Syracuse was reported to the health authorities of Buffalo, June 28, as having smallpox; he became ill, June 18, but attended to his train from June 22 to June 26, during which time he was in the infective stage.

PHILADELPHIA

Medal Awarded to Dr. Coolidge.—The Franklin Institute of Philadelphia has awarded the Howard N. Potts gold medal for 1926 to William D. Coolidge, Ph.D., inventor of the roentgen-ray tube which bears his name, now assistant director, research laboratory, General Electric Company. The medal will be awarded, October 20, by the institute, "in consideration of the originality and ingenuity shown in the development of a vacuum tube that has simplified and revolutionized the production of x-rays." Dr. Coolidge will then present a paper on his new cathode ray tube.

Graduate Courses in Medical Subjects and Residencies in Specialties

WHERE THESE COURSES MAY BE OBTAINED

DERMATOLOGY

Chicago Policlinic.
Columbia University College of Physicians and Surgeons.
Cook County Hospital, Chicago (Residencies).
Cornell University Medical College.
Harvard Medical School.
Johns Hopkins Hospital (Residencies).
Mount Sinai Hospital, New York City (Residencies).
New York Polyclinic Medical School and Hospital.
New York Post-Graduate Medical School.
New York Skin and Cancer Hospital.
Stanford University School of Medicine.
Tulane University Graduate School of Medicine.
University of California Graduate Division, Berkeley.
University of Minnesota Graduate School of Medicine (Fellowships).
University of Pennsylvania Graduate School of Medicine.

SYPHILOLOGY

Columbia University College of Physicians and Surgeons.
Harvard Medical School.
New York Polyclinic Medical School and Hospital.
New York Skin and Cancer Hospital.
Stanford University School of Medicine.
University of Berlin Medical Faculty.
University of California Graduate Division, Berkeley.
University of Pennsylvania Graduate School of Medicine.
Yale University School of Medicine.

Hospitals Providing Approved Residencies in Certain Specialties

BARNES HOSPITAL, 600 S. Kingshighway, St. Louis.—Residencies in the specialties, Internal Medicine, Obstetrics, Surgery and Gynecology. Dr. L. H. Burlingham, Med. Supt.

COOK COUNTY HOSPITAL, Harrison and Wood Sts., Chicago.—Residencies in Eye, Ear, Nose and Throat, Contagious, Skin and Venereal Diseases, Obstetrics, Medicine, Pediatrics, Surgery, (a) Fracture, (b) Oral. Mr. Michael Zimmer, Warden.

JOHNS HOPKINS HOSPITAL, Baltimore.—Residencies in the specialties. Dr. Winford H. Smith, Director.

MOUNT SINAI HOSPITAL, Fifth Ave. and 100th St., New York City.—Courses in Internal Medicine and Pediatrics, Surgery, Gynecology and Dietetics, Dermatology, Neurology, Psychiatry, Ophthalmology, Otology and Surgical Pathology. Write to the Secretary for Medical Instruction, 1 E. 100th St.

FRANCE

Prizes for Works on Venereal Disease.—The French National League against the Venereal Peril offers three prizes as follows: (1) 5,000 francs to the author of the best work on "The Hereditary Syphilitic Psychopathies in Children and Adolescents and Their Influence on Juvenile Criminality." (2) 5,000 francs to the author of the best study on "The Association of Syphilis and Tuberculosis in Osteo-Articular Affections (Pathogenesis, Diagnosis and Treatment.") (3) 20,000 francs to the author of the most important discovery in the domain of venerology during the years 1926 and 1927.

The conditions for the two first prizes (the manuscripts to be anonymous) are: The manuscript must be in French and must never have been published; it must be not only a general review of the subject, but, above all, original work pertaining to new data. Three typed copies, with an index to each, must be sent. Each manuscript must be accompanied by a sealed envelop containing an epigraph with the name and address of the author. The envelops will be opened after the decision of the jury has been made known. The manuscripts for these two prizes are to be sent directly to the office of the league, 44, Rue de Lisbonne, Paris (VIII^{e}) before Oct. 1, 1928. One of the three copies of the paper will be returned to the author after the decision of the jury has been made public. The league may favor the publication of the papers presented.

For the third prize (20,000 francs), if the jury does not consider any of the discoveries presented worthy, the prize will not be awarded. However, the prize may be divided between the authors of the two best contributions to the subject. The prizes will be awarded in December, 1928.

LATIN AMERICA

Lepers Dismissed.—Certificates of dismissal were given to twelve patients of the leprosarium of Cabo Blanco, May 16, after they submitted to rigorous tests by the head of the institute, Dr. Benchetrit; according to the *Bulletin of the Pan-American Union* they were declared cured.

RIO DE JANEIRO

Cardiovascular Syphilis.—Dr. G. Londres, in discussing cardiovascular syphilis before the Medical and Surgical Society, pointed out that a historical review shows that at first the only syphilitic lesions studied were cutaneous and mucous. Only much later was attention given to the visceral changes. The rôle of syphilis in cardiovascular diseases received first attention at the hands of Ricord in 1845. The contributions of Lancini, Morgagni and Paré hardly dealt with any but late manifestations. Fournier, however, studied the early changes in the pulse. Even now, a number of authors dwell on the rarity of early changes in cardiovascular syphilis. In Brazil, however, the subject has been studied by a few investigators, such as Clark and Austregesilo, and more recently by da Cunha, who is in charge of the visceral syphilis service at the Gaffrée-Guinle Foundation. Londres described two cases of primary syphilitic pericarditis and the start of the secondary stage. Leredde is wrong in stating that tachycardia is rare in the secondary stage. At the Gaffrée-Guinle Foundation, a rapid pulse is common, reaching as high as 120. This is so typical that when patients present themselves with a healed chancre, and the other signs are not definite, the presence of tachycardia is accepted as a probable sign of secondary manifestations.

RIO DE JANEIRO

Arsphenamine Accidents.—Dr. Silva Araujo recently submitted to the National Academy of Medicine some statistics collected in the venereal dispensaries. Up to Aug. 31, 1925, when an inquiry was made in Brazil as to accidents caused by neo-arsphenamine, 308,185 injections had been given in the dispensaries located in the federal district and the various states. Only two deaths were discovered that could be attributed to arsphenamine. From Sept. 1, 1925, to April 30, 1926, 73,117 injections were given in the federal district with no fatal outcome. The result shows, then, one death for each 191,000 injections.

VIENNA

The Retirement of Professors Riehl and Dimmer.—With the end of the summer semester, the so-called *Ehrenjahr,* or honor year, which was granted Professor Riehl, the director of the First Dermatologic Clinic at the University of Vienna, comes to a close. Professor Riehl is past 70 years old, and is compelled by the law requiring retirement of university professors at the age of 70 to give up his post. His enforced resignation awakens many regrets that the retirement law should prevent such eminent men as Riehl from continuing their activities. The situation is made worse by the fact that the natural successor to Riehl, the Vienna dermatologist Professor Kyrle, died, some time ago, quite unexpectedly. Concerning the fate of the First Eye Clinic, of which Prof. Dr. Dimmer, recently deceased, was the director, no definite action has been taken as yet. At first it was reported that for economic reasons the clinic was to be closed. However, the united protest of academic circles, and certain keen-sighted government officials, succeeded in frustrating any such designs. Scarcity of funds, however, makes difficult the execution of plans.

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Italian Dermatological Society.
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La Société Française de Dermatologie et de Syphiligraphie.
Section on Dermatology, Royal Society of Medicine.
British Association of Dermatology and Syphilis.
Berlin Dermatological Society.
Cologne Dermatological Society.
German Dermatological Society in Czechoslovakia Republic.
Vienna Dermatological Society.
Munich Dermatological Society.
Deutsche Dermatologische Gesellschaft.
Swiss Dermatologic Society.

Abstracts from Current Literature

Isolated Bilateral Paralysis of the Glossopharyngeal Nerve Due to Cerebral Syphilis. B. J. Alpers, Am. J. M. Sc. **171**:740 (May) 1926.

A report of a case of syphilis is made in which no involvement of the cranial nerves was noted except in the glossopharyngeal. Although there was difficulty in swallowing solid food, the taste over the posterior third of the tongue was preserved. The lesion disappeared under antisyphilitic treatment and has not recurred.

The Blood of Patients with Smallpox During a Recent Epidemic. K. Ikeda, Arch. Int. Med. **37**:660 (May) 1926.

Characteristic changes were found in the blood of patients with smallpox, the platelets being greatly diminished in the earlier stages; but the earlier the rise of the platelets occurred the sooner the approach of the desiccation period with a consequent shorter course of the disease.

A mild discrete form in the maculopapular stage is accompanied by leukopenia while a severe form is indicated if there is a progressive leukocytosis with an early high polynucleosis.

Normoblasts, basophilic stippling and polychromatophila indicate purpuric smallpox as does a rapidly progressive absolute lymphocytosis.

The writer states that scarlatinal and other exanthems can be definitely differentiated from the purpuric type of smallpox during the erythematous stage.

Jamieson, Detroit.

The Use of the Quartz Lamp in Psoriasis. J. H. Swartz, Boston M. & S. J. **193**:162 (July 23) 1925.

The author outlines the method of treatment by the quartz lamp used in approximately 150 cases of psoriasis, dividing them into three classes: (1) cases with an acute onset and in their first attack; (2) cases that show a fine papulosquamous eruption, generalized or localized, and in which there have been previous attacks; (3) cases which show large plaques of hyperkeratotic type of psoriatic lesions that have resisted practically all treatments. He quotes four cases as examples of response to this treatment. He states that the foregoing method, although not specific, has thus far proved to be the cleanest and most efficient in cases of psoriasis. Ninety-nine per cent of the cases responded, and they have been kept free of the disease for a longer period.

Management and Control of Venereal Diseases. Henry J. Perry, Boston M. & S. J. **193**:381, 1925.

This is an outline of management of syphilis for the general practitioner.

The Treatment of Syphilis. C. Morton Smith, Boston M. & S. J. **193**:383, 1925.

This is a good summary of present-day judicious treatment of syphilis.

SYPHILIS OF THE AORTA AND HEART. WILLIAM D. SMITH, Boston M. & S. J. **193**:387, 1925.

In a brief article the author summarizes the symptoms and treatment, including the handling of the patient.

SOME DOGMATIC STATEMENTS CONCERNING TREATMENT OF NEUROSYPHILIS. H. C. SOLOMON, Boston M. & S. J. **193**:390, 1925.

This short article touches various phases of neurosyphilis therapy.

OBSERVATIONS ON CONGENITAL SYPHILIS. P. H. SYLVESTER, Boston M. & S. J. **193**:393, 1925.

The author gives a good discussion of congenital syphilis involving the skin and mucous membranes, viscera, skeleton, central nervous system and special sense organs, with a number of roentgenograms of syphilis of the bone in infants and children. Therapy is also discussed.

INTERSTITIAL KERATITIS. MAUD CARVILL and G. S. DERBY, Boston M. & S. J. **193**:403, 1925.

This is a discussion of approximately 1,000 cases of interstitial keratitis treated at the Massachusetts Eye and Ear Infirmary. The incidence of the disease among eye cases at this hospital is 0.45 per cent, and tables are shown of the age of onset, incidence of sex, visual results in both treated and untreated cases, course of the disease, duration of attacks, recurrences, other members of the family, treatment, etc.

CONGENITAL SYPHILIS AS A CAUSE OF MENTAL DEFICIENCY. N. A. DAYTON, Boston M. & S. J. **193**:668, 1925.

A review of 9,183 cases of mental defect, compared with 16,156 cases of non-defective children showed only a difference of 1.1 per cent in the Wassermann reaction. Defective cases showed the highest percentage of positive Wassermann reactions, but the author states that from these statistics it would appear that congenital syphilis is not of great importance as a cause of mental deficiency.

LANE, Boston.

TWENTY-FIVE YEARS OF CONGENITAL SYPHILIS IN BOSTON: A STATISTICAL AND COMPARATIVE STUDY. P. H. SYLVESTER, J. A. M. A. **87**:298 (July 31) 1926.

This study is based on records of 581 cases in the Children's Hospital and the Infants Hospital from 1901 to 1925. The total death rate of syphilitic children during the first year of life was 85 per cent from 1901 to 1914, 33 per cent from 1915 to 1919 and since then 21.5 per cent. Since 1920 there has been an organized clinic and social service. The Wassermann reaction as an aid to diagnosis proved disappointing in the early weeks of life.

The author has obtained excellent results with sulpharsphenamine; its effectiveness appears to equal neo-arsphenamine, and its ease of administration furnishes a decided advantage for it. One of the important observations was that there is a "critical period" during which treatment must be instituted to obtain the best results. This period is from 5 weeks to 2 months of age. Even

organized clinic and social service facilities, as well as the advances in syphilitic therapy, have not made much impression on the prognosis when treatment was instituted much before or after the "critical period." More effective treatment for the very early case must be developed, or its prevention obtained through treatment of pregnant syphilitic mothers.

DAILY VARIATIONS IN COMPLEMENT FIXATION (KOLMER) AND PRECIPITATION (KAHN) REACTIONS IN UNTREATED SYPHILITIC PATIENTS. S. S. GREENBAUM and E. YAGLE, J. A. M. A. **87**:318 (July 31) 1926.

This study consisted in applying the Kolmer and Kahn tests simultaneously for twelve consecutive days. Of fifty untreated syphilitic patients, eight showed definite variations in the result of one or other test during the observation period. In only two out of the eight cases, however, were both tests negative on the same day. The variations are undoubtedly indicative of a change from day to day in the sum total of syphilitic substances present in the blood. The present study supports that of Craig in that there are transitory variations in the Wassermann reaction result, even when the tests are made with refined and newer methods. However, if both Kahn and Kolmer methods are performed on a given serum, the factor of natural variation is so reduced that it may be ignored.

THE INTRAVENOUS ADMINISTRATION OF SODIUM CHLORIDE IN BROMODERMA. P. E. BECHET, J. A. M. A. **87**:320 (July 31) 1926.

Bechet reports the results of the treatment advocated by Wile (ARCH. DERMAT. & SYPH. **8**:407 [Sept.] 1923) in three personally observed cases of bromoderma. Case 1 presented pustular and condylomaform lesions, which cleared up in a startling manner under sodium chloride therapy. Case 2 presented a similar type of lesion and was cured in about six weeks with administrations of from 100 to 200 cc. of decinormal sodium chloride solution three times a week. In case 3, the lesions were of papulopustular character. The same treatment resulted in the disappearance of the eruption in six weeks. No bromine was demonstrated in the urine in this case.

The only contraindication to the employment of this treatment is nephritis. The effect of Wile's treatment in this hitherto obstinate disorder warrants its further employment.

THE ANALYSIS OF SPINAL FLUID TESTS. J. B. AYER, J. A. M. A. **87**:377 (Aug. 7) 1926.

Ayer believes that more value would be obtained from spinal fluid tests if they were done and interpreted by the physician most conversant with the patient. The simpler tests will yield the most information, as a rule. The tests which can be done by any one capable of performing a spinal puncture are pressure studies, naked eye studies of color, turbidity, presence of blood, etc., cell count, protein precipitation and globulin ring test. In addition to these, but requiring special laboratory training and facilities are the Wassermann, colloidal gold or benzoin tests, smears and cultures for bacteria, and quantitative sugar, chlorides, and nonprotein nitrogen estimations.

Illustrative cases demonstrating mistakes in the interpretation or correlation of the spinal fluid contents with the clinical data are incorporated.

ANGIONEUROTIC EDEMA OF PENIS AND SCROTUM. W. J. EZICKSON, J. A. M. A. **87**:561 (Aug. 21) 1926.

Ezickson's patient developed a sudden swelling of the external genitalia, for which no cause could be determined. This was immediately and permanently relieved by epinephrine.

RECIPE FOR EPILATING WAX. W. A. PUSEY, J. A. M. A. **87**:663 (Aug. 28) 1926.

As a substitute for commercial epilating waxes, which are expensive, Pusey gives a formula, which is efficient.

It consists of beeswax, 1 part, and finely powdered rosin, 4 parts (each by weight).

The wax is melted over a low fire and the rosin poured in and stirred until the whole mass is thoroughly melted. For use, it must be molded. It can be poured into a greased dish and criss-crossed so as to form small blocks, or molded into sticks by pouring into rolled greased paper. For application it is warmed and applied until a thick coat is formed; this is then stripped off in a direction opposite that of the hairs.

USE OF COLLOIDAL LEAD IN THE TREATMENT OF CANCER. F. C. WOOD, J. A. M. A. **87**:717 (Sept. 4) 1926.

Wood gives the record of attempts that have been made to influence malignant growths by the use of colloidal metals. The efforts of Neuberg, Kausch, Rohdenberg, Loeb and others, with colloids of copper, silver, gold and other metals, failed. Likewise, endeavors to render treatment with the roentgen ray or radium more effective by increasing the local secondary radiation through the presence of heavy metals injected intravenously were ineffectual.

The efforts of W. Blair Bell with colloidal lead are then detailed. Patients with nephritis must be rejected. Extreme anemia and cachexia are also contraindications. As much as possible of large tumors must be removed surgically. Radiation may be employed in conjunction with the lead treatment, and the effect of radiation seems to be enhanced when employed in conjunction with the lead. The remedy is dangerous as the lethal dose to the animal must be approached in order to influence the tumor. Therefore, experience and careful supervision are essential.

Of 227 patients treated by Bell, fifty have lived from one to five years. All of these patients were in an apparently hopelessly advanced stage of the disease. "For the first time a substance has been found that will arrest the growth of carcinoma for a period of from one to five years and this in patients both inoperable and beyond the power of irradiation to effect a cure." There are many problems in connection with this subject which must be investigated.

In animals, the effect of colloidal lead on tumors is the production of intense congestion, followed by thrombi, necrosis and absorption. When radiation is used in conjunction with lead in animal tumors, the effect of the radiation is evident only after the lead has been administered several times. This means that any increase in the effectiveness of the roentgen ray is due to the direct toxic action of the lead and not to secondary radiation from lead particles.

MICHAEL, Houston, Texas.

IMMUNOLOGICAL STUDIES WITH HERPES VIRUS WITH A CONSIDERATION OF THE HERPES-ENCEPHALITIS PROBLEM. H. ZINSSER and F. TANG, J. Exper. Med. **44**:21 (July) 1926.

The experimental evidence obtained in this work tended to show that the two varieties of viruses were not identical.

FURTHER OBSERVATIONS ON PRURITIS ANI AND PRURITIS VULVAE OF MYCOTIC ORIGIN. A. CASTELLANI, J. Trop. Med. **28**:329 (Sept. 15) 1925.

A large percentage of cases was found to be due to fungi of the epidermophyton group. Various treatments were recommended, but nothing new was presented.

A BRIEF NOTE ON THE BIOCHEMICAL REACTIONS OF CERTAIN FUNGI, VIZ., MONILIA KRUSEI, M. MACEDONIENSI and M. TROPICALIS. E. C. SPAAR, J. Trop. Med. **29**:47 (Feb. 1) 1926.

Since these organisms were isolated in Ceylon in 1910, they have been passed through a large number of culture mediums, but although the growths have been renewed by subcultures many times, they have in no way deteriorated and have kept their general characteristics.

LEPROSY IN A FOURTEEN MONTHS OLD CHILD. E. A. NEFF, J. Trop. Med. **29**:146 (May 15) 1926.

The patient in the case reported is stated to be the youngest on record, the history being that of a child born of an actively leprous mother. Fourteen months after birth the first nodule was noticed on the cheek and was positive for *Bacillus leprae*. Several small depigmented areas were also observed on the shoulder and back. After seven months' treatment with chaulmoogra oil the disease became stationary and the bacteriologic reaction negative for acid-fast

JAMIESON, Detroit.

RETICULATED PIGMENTARY POIKILODERMA OF THE FACE AND NECK. H. W. BARBER, Proc. Roy. Soc. Med. **19**:60 (Aug.) 1926.

The eruption involved the face only, was situated symmetrically on either side and was more marked on the right. It occupied an area in front of the ears, extending forward to the level of the outer border of the eyebrow, downward to the level of the mouth, and upward over the forehead. The case agreed essentially with the original description of Civatte, as follows: "A pigmented and atrophying erythrodermia arranged in networks; a localized symmetrical eruption practically confined to the face and neck; an evolution more or less indefinite; the dermatosis is seen in women at about the age of the menopause."

MULTIPLE OCCUPATIONAL SQUAMOUS CARCINOMA IN A GUNSMITH. W. J. O'DONOVAN, Proc. Roy. Soc. Med. **19**:63 (Aug.) 1926.

A man, aged 55, had been a gunsmith for thirty-nine years, and during most of that time his clothes had been saturated with oil. During and since the war he had been working under the same greasy conditions. Among the oils he handled were paraffin, Rangoon oil and petrolatum. He had had fifteen tumors excised, and the gravest operation was the removal of nearly all of the nose. Four tumors had been submitted to microscopic examination, and they were

squamous carcinomas. So far, he had had no adenopathy. He asked the section to certify that his condition was due to his work. Tumors were present on the scrotum, limbs and ears. There was no pigmentary change. The backs of the ears were studded with comedones.

GUY, Pittsbugh.

LIQUOR OF ALIBOUR (SOLUTION OF COPPER SULPHATE IN WATER) IN THE TREATMENT OF PITYRIASIS CAPITIS. E. JUSTER, Bull. Soc. franç. de dermat. et syph. **33**:389, 1926.

The author recommends this application for both the dry and oily types of pityriasis capitis.

RHEUMATIC PAINS IN THE COURSE OF TREATMENT WITH ARSENIC AND BISMUTH COMBINED. L. CHATELLIER, Bull. Soc. franç. de dermat. et syph. **33**:391, 1926.

There were muscular and articular pains, with swelling and tenderness of the affected joints. Similar occurrences have been reported in cases in which the patients were treated with bismuth alone, and with the arsenical drugs.

LIQUID AIR IN DERMATOLOGIC THERAPEUTICS. PIERRE CHARPY, Bull. Soc. franç. de dermat. et syph. **33**:392, 1926.

The author describes the properties of liquid air and containers for its use in treatment. He has employed it successfully in the treatment of lupus erythematosus, epitheliomas, verrucae and condylomas.

RELATIONS OF GLYCEMIA WITH DERMATOSES. RAYNAUD, LACROIX and HADIDA, Bull. Soc. franç. de dermat. et syph. **33**:397, 1926.

Hyperglycemia was found in twelve of sixty fasting patients with various dermatoses. It was not present in cases of alopecia areata, erythema multiforme, rosacea, rhinophyma, erythrodermas and cutaneous dyschromias. It was found in 21.4 per cent of cases of bacterial infection, and irregularly in eczemas. Its presence in pruritic conditions leads the authors to suspect diabetes. It was found in two of six psoriatic patients.

ALCOHOLIC SOLUTION OF COPPER SULPHATE IN DERMATOLOGY. JEAN MEYER, Bull. Soc. franç. de dermat. et syph. **33**:404, 1926.

This is presented as an improvement on the liquor of Alibour (aqueous copper sulphate solution) for use in pyodermas and seborrhea.

LIQUID AIR AS A CAUSTIC. MONTLAUR, Bull. Soc. franç. de dermat. et syph. **33**:406, 1926.

Against the use of liquid air, Montlaur contends that it is irritating to the skin.

HYPERGLYCEMIA IN THE DERMATOSES. HUDELO, Bull. Soc. franç. de dermat. et syph. **33**:407, 1926.

This subject, dealt with by Raynaud, Lacroix and Hadida in the preceding *Bulletin*, is here discussed by Hudelo and others.

FACIAL NEVOCARCINOMA, RECURRING AFTER EXCISION. HUDELO, RABUT and CAILLIAU, Bull. Soc. franç. de dermat. et syph. **33**:411, 1926.

Three months after excision, a melanocarcinoma recurred and metastasized.

TREATMENT OF SYPHILIS DURING PREGNANCY. A. GALLIOT, Bull. Soc. franç. de dermat. et syph. **33**:416, 1926.

Fifty-six women gave histories of stillbirths and premature labor in previous pregnancies. Twenty-nine were treated with the arsphenamines, and in 89 per cent pregnancy ended in normal delivery at term. Twenty-seven were treated with bismuth hydroxide, with good results in 85 per cent.

TRAUMATIC ULCERATIVE SYPHILID OF THE FOOT. GIACARDY and LODEON, Bull. Soc. franç. de dermat. et syph. **33**:430, 1926.

In a man, aged 28, lesions first appeared on a toe which had been repeatedly traumatized in walking. The response to treatment was rapid.

MICROSCOPIC SEARCH FOR THE DUCREY BACILLUS. GEORGES LEVY and MILAN KITCHEVATZ, Bull. Soc. franç. de dermat. et syph. **33**:433, 1926.

The authors describe a simple and rapid staining technic, whereby they have attained positive results in 85 per cent of cases examined. If the lesion is active, pus is taken, preferably from the border; if the ulcer is healing, it is curetted before a specimen is taken. A smear made on a glass slide, is allowed to dry in the air, and is then fixed by heat. A 1 per cent solution of methylene blue is then added, and heated to boiling, which is repeated three times. The slide is then washed and dried.

CENTRIFUGAL ANNULAR ERYTHEMA. WEILL and WATRIN, Bull. Soc. franç. de dermat. et syph. **33**:435, 1926.

An extensive eruption of eight months' duration in a man, aged 26, was apparently identical with a condition described as centrifugal annular erythema by Darier in the *Annales* in 1916.

SABRE TIBIAS IN A VERY LATE CASE OF CONGENITAL SYPHILIS. G. ETIENNE and HANRIOT, Bull. Soc. franç. de dermat. et syph. **33**:437, 1926.

A man, aged 60, had first noticed the condition at the age of 45; it had progressed for ten years and had then become stationary.

VITILIGO OF SYMMETRICAL DISTRIBUTION, WITH EXTENSIVE ALTERATIONS OF THE SENSITIVITY OF THE BONE TO VIBRATIONS. P. SIMON and P. MICHON, Bull. Soc. franç. de dermat. et syph. **33**:438, 1926.

The patient, a man, aged 66, had had malaria in Indo-China, and a peculiar febrile illness, following which pigmentary changes had been noticed. The involvement was generalized, and some of the bones showed lack of vibratory sensitivity.

ECZEMA, ACIDOSIS AND INSULIN. DROUET and VERAIN, Bull. Soc. franç. de dermat. et syph. **33**:439, 1926.

In eight of ten cases, acidosis, without ketosis, was found. Insulin was administered in one case with a good result.

A New Case of Syphilitic Icterus in the Primary Period. J. Benech and Crehange, Bull. Soc. franç. de dermat. et syph. **33**:443, 1926.

The icterus appeared six or seven days after the onset of the chancre; a typical secondary syphilitic eruption followed. Arsphenamine was administered, and the icterus vanished.

Fatal Mercurial Stomatitis. J. Watrin, Bull. Soc. franç. de dermat. et syph. **33**:445, 1926.

During a year, the patient had received three series of eight injections of gray oil; the last series had been completed in the presence of the stomatitis. The urine remained clear.

Unusual Location of a Primary Lesion. Spillmann and Grehange, Bull. Soc. franç. de dermat. et syph. **33**:446, 1926.

A chancre was found on the vaginal wall.

Tabes Appearing Five Years After the Chancre in a Patient Aged 27. Spillmann and Crehange, Bull. Soc. franç. de dermat. et syph. **33**:448, 1926.

During the first year after the appearance of the chancre, the patient had received three series of eight injections of neo-arsphenamine, during the second year, two such series and in the third year four injections. There had been no secondary eruption.

Two New Cases Establishing the Relationship of Origin of Zoster and Varicella. L. Spillmann and Crehange, Bull. Soc. franç. de dermat. et syph. **33**:454, 1926.

In the first case, a man developed zoster fifteen or twenty days after he had seen his father with the same condition; twelve or fifteen days later, his child developed varicella. In the second case, zoster appeared in a woman about fifteen days after her child had had varicella.

The authors feel that autogenous serum therapy is valuable in zoster if used early.

Presentation of Three Cases of Lichen and Lichenoid Dermatitis. Spillmann, Watrin and Crehange, Bull. Soc. franç. de dermat. et syph. **33**:456, 1926.

In the first case, generalized lichen planus appeared two months after the cure of intercostal zoster; at the site of the former zoster the eruption of lichen planus was exaggerated. The second case was one of hypertrophic lichen planus, and the third patient presented a peculiar pigmentary lichenoid eruption on the legs.

Parkhurst, Toledo, Ohio.

Pathogenesis of Hereditary Syphilis. G. Piccardi, Gior. ital. dermat. e sifil. **67**:22 (April) 1926.

The transmission of syphilis to the fetus may occur from both parents or from the mother alone. The paternal transmission of syphilis is doubtful. In fifty-eight personal observations of abortions, stillbirths and children born with clinical manifestations of syphilis, the mother was infected in every case. On

the other hand, the children of men with active syphilis of the skin, heart or nervous system were always born free from any symptoms when the mother had not been infected.

GRANULOMA TRICOPHYTICUM (MAJOCCHI). A. ORO, Gior. ital. dermat. e sifil. **67**:258 (April) 1926.

Majocchi's granuloma tricophyticum is a clinical entity entirely different from kerion and sycosis, as is proved by its clinical aspects and pathologic histology. The three conditions may be observed in the same patient, each pursuing its separate course. The fungi are rarely found in the granulomatous tissues, a fact which has led various observers to believe that the condition is due to the toxins and not to the fungi themselves.

A CASE OF CUTANEOUS BLASTOMYCOSIS. P. TARCHINI, Gior. ital. dermat. e sifil. **67**:263 (April) 1926.

This is an extensive and detailed report of a case of disseminated blastomycetic dermatitis, on the face, thorax and limbs. This condition is rare in Europe, this probably being the second authentic case reported in a native Italian.

TRICOPHYTINE IN THE DIAGNOSIS AND TREATMENT OF TINEA. N. GARZELLA, Gior. ital. dermat. e sifil. **67**:280 (April) 1926.

The author's conclusions are: Tricophytine tests are of no diagnostic value in cases of superficial tinea, but they are positive in cases of deep-seated tinea. Many cases of tuberculosis of the skin give a positive reaction to tricophytine. Injections of tricophytine give good therapeutic results in cases of tinea profunda but are worthless in superficial tinea. Protein therapy is valueless in the treatment of all forms of tinea.

THALLIUM IN THE TREATMENT OF TINEA. A. PASINI, Gior. ital. dermat. e sifil. **67**:287 (April) 1926.

Fifty-one cases of tinea in children were treated with thallium acetate, of which twenty-nine were cases of tricophytosis, eighteen cases of microsporia and three cases of favus. The drug is administered by mouth in one dose of 0.009 Gm. per kilogram of body weight. The alopecia that ensues is due to a temporary atrophy of the hair follicle. Chemical examinations of hairs and of the scalp have failed to show the presence of thallium. The author concludes that thallium acetate is efficacious in the treatment of tinea of the scalp, 78 per cent of the cases being cured with its use.

THE EPILATING PROPERTIES OF THALLIUM. M. DIVELLA, Gior. ital. dermat. e sifil. **67**:291 (April) 1926.

Thallium acetate used by mouth in doses of 0.008 Gm. per kilogram of body weight produces an epilation of the hairs of the scalp from fifteen to twenty days after its administration. This epilating action is probably due to an endocrinous disturbance produced by the salt of thallium. In most cases the patient suffers from general disturbance, drowsiness, paleness, loss of weight, cephalalgias, arthralgias and abdominal pains. The application of a 1 per cent ointment of thallium acetate to the scalp may produce serious general symptoms without affecting the hair. The author concludes that although

thallium acetate is a cheap, easy and convenient method of epilation in cases of tinea of the scalp, it cannot be a choice procedure of treatment, owing to the high toxicity of the drug and the serious disturbances which it may produce.

TREATMENT OF LUPUS ERYTHEMATOSUS WITH INTRAVENOUS INJECTIONS OF GOLD SALTS. E. FREUND, Gior. ital. dermat. e sifil. **67**:443 (April) 1926.

Of sixteen cases of lupus erythematosus, the author has succeeded in curing two patients and greatly improving five. He uses intravenous injections of a gold proprietary preparation which responds to the formula: 4-amino-2-aurotyophenol-1-carbonic acid.

REPORT OF A CASE OF BOWEN'S DISEASE. L. TOMMASI, Gior. ital. di dermat. e sifil. **67**:925 (June) 1926.

The author reports a typical case of Bowen's disease, associated with other multiple lesions of superficial epithelioma. He concludes that Bowen's disease is a basal celled epithelioma from the beginning, which should be more appropriately named "benign superficial epithelioma of Bowen." The presence of dyskeratosis or atypical cells is not sufficient to establish the diagnosis. He calls attention to the rôle of hyperpigmentation in the development of cutaneous epithelioma.

ALLERGIC REACTIONS IN CASES OF CUTANEOUS MYCOSIS. M. SCOPESI, Gior. ital. di dermat. e sifil. **67**:1022 (June) 1926.

The author has investigated the allergic reactions which the different forms of tinea may awaken in the human body. In superficial forms of tinea and in favus, cutaneous tests and complement fixation tests have been always negative. In cases of deep seated tinea both tests have been positive in 50 per cent of the cases. Good results are reported in the treatment of these cases with injections of extracts of different hyphomycetes.

GIANT MYCOTIC GRANULOMA OF THE SCALP. A. ORO, Gior. ital. di dermat. e sifil. **67**:1034 (June) 1926.

This is a report of an interesting case of a large tumor of the scalp in a child, aged 8 years, which was clinically diagnosed as sarcoma. Microscopically it proved to be a granuloma in which mycelium was found. The author calls the condition "pseudo-blastoma tricophyticum."

PITYRIASIS RUBRA PILARIS. P. MARIGONDA, Gior. ital. di dermat. e sifil. **67**:1059 (June) 1926.

The three cases of this disease reported by the author were free from endocrine disturbances and had no signs of tuberculosis and tuberculin tests were negative. Arsenical treatment proved efficacious. The author concludes that pityriasis rubra pilaris is entirely different from lichen ruber acuminatus, that it is not due to tuberculosis, but to some unknown toxic agent which probably acts through the endocrine system.

DERMATITIS INTERDIGITALIS CRYPTOCOCCICA. G. MARENGO, Arch. ital. dermat. sifil. e ven. **1**:464 (May) 1926.

Six cases of eczematoid dermatitis of the interdigital folds of the hands are reported. Cryptococcus interdigitalis was isolated in pure cultures. The author reproduced the disease experimentally.

NEW SERUM DIAGNOSIS OF SYPHILIS. O. SCIARRA, Riforma med. **42**:533 (June 7) 1926.

The blood serum of syphilitic patients presents numerous ultramicroscopic granules, free or agglutinated, of different size and mobility. If absolute alcohol is added to the serum, these particles are dispersed rapidly and uniformly. These liberated particles will again react in the presence of complement, fixing it and showing its deviation when a hemolytic system is added. The technic of the reaction is as follows:

Inactivated Serum, Cc.	Alcohol, Cc.	Complement, Cc.	Incubation, at 37 C.	Hemolytic System, Cc.	Incubation, at 37 C.	Result	
						Negative	Positive
0.2-0.3	0.1-0.15	According to titration	45 to 60 minutes	1	1 to 2 hours	Hemolysis —	No hemolysis ++++

HISTOPATHOLOGY AND TREATMENT OF RHINOPHYMA. E. P. FIDANZA and F. R. RUIZ, Rev. med. Latin Am. **11**:1285 (May) 1926.

The authors recommend surgical removal of the hypertrophied skin, under local anesthesia. They believe that the increased circulation in these cases is the cause of an exaggerated nutrition of the tissues and consequently of the hyperplasia of the conjunctive tissue and of the sebaceous glands.

PARDO-CASTELLO, Havana.

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

ETIOLOGY OF OROYA FEVER. H. NOGUCHI and T. S. BATTISTINI, J. Exper. Med. **43**:851 (June 1) 1926.

A pure culture of a micro-organism resembling in morphology and pathogenic action *Bartonella bacilliformis* has been obtained by Noguchi and Battistini from blood taken during life from a case of oroya fever which ended fatally. The blood taken at Lima and passed directly into a citrate solution and transported to New York at refrigerator temperature yielded positive cultures twenty-eight days after its withdrawal from the patient. The inoculation of cultures of *Bartonella bacilliformis* into *Macacus rhesus* produced infection and gave rise to effects which differ with the mode of inoculation. The intravenous injection of the culture into young macaques induces a prolonged, irregularly remittent fever. The organism can be cultivated from the blood over a long period, and it has been detected within the red corpuscles of the monkeys, reproducing the precise appearances observed in human cases of oroya fever. The intradermal injection of the culture into the eyebrow of young macaques gives rise to nodular formations rich in new blood vessels and showing the bacilliform organism within the endothelial cells. From the experimentally induced nodules, cultures of the organism are readily recovered.

GENERAL PARALYSIS AND TREATMENT BY MALARIA FEVER. A. R. GRANT and J. D. SYLVESTON, J. Med. Sc. **72**:192 (April) 1926.

Malaria therapy is said by Grant and Sylveston to be the best method known of treating general paralysis, and it is a safe method if proper precautions

are taken. One attack of malaria seems to confer a partial immunity to a second infection. Complete remissions occur in all clinical types of the disease, but are most common in the expansive type and in the demented type. In cases which do not go on to a complete remission life is prolonged, and marked physical and mental improvement may result. Malaria therapy does not seem to be so successful in women as in men. Among male general paralytic patients of the class admitted to mental hospitals in this country, we may reasonably expect a complete remission rate of from 20 to 30 per cent.

CONTROL OF ARSPHENAMINE TREATMENT BY LIVER FUNCTION TESTS. H. A. DIXON, W. R. CAMPBELL and M. I. HANNA, Canad. M. A. J. **16**:551 (May) 1926.

Dixon et al. aver that the van den Bergh test has revealed additional points of interest in the pathology and treatment of arsphenamine intoxication and represents a distinct advance in its control. Incapacitating illness and, at times, permanent injury to the liver results from the use of arsphenamine in the treatment of syphilis. The van den Bergh reaction can be used to diagnose the early stages of injury while the patient is still in the stage of latent jaundice and while suitable measures can be taken to minimize the injury. It is of value also in the control of the more severe stages of arsphenamine jaundice and liver atrophy. The authors contend that arsphenamine treatment without adequate laboratory check on the injury induced by its use is quite as, or even more, unjustifiable than treatment without the Wassermann reaction or other laboratory control of the treatment of the primary disease.

POSTMALARIAL CONDITION OF CEREBROSPINAL FLUID IN GENERAL PARALYSIS OF INSANE. J. E. NICOLE and J. P. STEEL, Lancet **1**:1091 (June 5) 1926.

That some alteration actually does take place in the cerebrospinal fluid after malaria therapy in general paralysis of the insane is shown by the report made by Nicole and Steel based on the examination of forty spinal fluids. The globulin content is much diminished, and in some cases the reading obtained by the colloidal gold test is less typically general paralytic than before treatment. Such a change tends to appear about the end of twelve months after malaria is terminated. With the further lapse of time beyond this period the change continues, and the colloidal gold reading becomes even more like a tabetic condition. In some cases nothing higher than a "2" has been obtained in general paralytic, syphilitic or meningeal fields.

PATHOGENESIS OF LUPUS ERYTHEMATOSUS. J. SCHAUMANN, Ann. de dermat. et syph. **7**:193 (April) 1926.

Schaumann's theory of lupus erythematosus is based on microscopic examination in three acute diffuse cases and eight chronic localized cases. He claims that the skin lesions are the reflection of a lymphogranulomatosis, which is a process of benign character. Under some still unknown influence it may exceptionally develop into a malignant, acute form. While the nonmalignant lymphogranulomatosis does not affect the general health and may subside, the acute form terminates in fatal septicemia. The granulomatous tissue is composed of epithelioid cells, besides the lymphoid and plasma cells. The lymphogranulomatosis of lupus erythematosus is closely analogous to tuberculous pseudoleukemia. The acute or malignant form may coexist with tuberculous lesions. Follicular tuberculosis may be the origin of the disease. The history of the patients frequently revealed tuberculosis. The outbreak of the granulomatous process induces, on the other hand, gradual retrogression of the tuber-

culous lesions, thus explaining their absence at necropsy. Erysipelas perstans of the face, as well as the skin manifestations of acute lupus erythematosus are probably induced by tuberculous toxins or by cell substances from the affected glands. Guinea-pigs inoculated with the gland tissue did not develop tuberculosis.

CANCER OF THE LIP. CARLOS BUTLER, Ann. de la facultad de med. **10**:985 (Dec.) 1926.

Butler analyzes 173 cases of cancer of the lip and eighteen of precancer conditions. In the 159 cases involving the lower lip, seventy-seven patients were smokers and fifty-one *maté* users. The total 191 cases included 8.8 per cent in women; in 23.2 per cent the lesion was a postoperative recurrence. Under radium treatment, 60.3 per cent were clinically cured and only 10 per cent showed no improvement, in the lower lip cases, while 81.81 per cent were cured and 18.19 per cent improved in the upper lip cases. A special device for fastening the radium tube to the lip is illustrated.

JUXTA-ARTICULAR NODULES IN A SYPHILITIC. B. SPARACIO, Ann. d. mal. vén. **21**:241 (April) 1926.

Sparacio treated a patient, aged 30, with symmetrical nodules close to the elbow joints. The nodules were hard, round, the size of a pea, situated three or four in a group. The adjacent skin and glands were normal. The nodules did not cause any discomfort. The Wassermann test was positive. No changes in the joints were revealed by roentgen rays. On microscopic examination, a nodule proved to be a gumma. Several analogous cases are cited. Antisyphilitic treatment is effective in the early stage of the nodules, but without benefit when the stage of fibrous degeneration has been reached.

REACTIVATION OF WASSERMANN TEST UNDER INFECTION. H. DUFOUR ET AL., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:778 (May 14) 1926.

Dufour, Widiez and Castéran injected polyvalent T. A. B. vaccine in a man, aged 60, syphilitic for forty years. Two injections were given a week apart; this induced a positive Wassermann test by the third day. Three weeks later the test became negative again. The case, they say, proves that a previous and latent syphilis may be aroused under the influence of an intercurrent infection.

REACTIVATION OF WASSERMANN TEST IN INFECTIONS. G. MILIAN, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:795 (May 21) 1926.

Milian's experience includes cases in which a positive Wassermann test appeared in the course of herpes of the genital organs. Investigation and clinical signs testified to congenital syphilis. Of six cases with scarlet fever, a positive Wassermann test was positive only in one young man with signs of congenital syphilis. In one of Neuda's cases and in one of Marini's, the Wassermann test became positive in the course of influenza and typhoid fever. It is probable, Milian says, that many ulcerations, considered as tardy radiodermatitis, are in reality syphilitic lesions developed under the influence of the roentgen rays.

TUBERCULOSIS IN SYPHILIS. L. LAEDERICH and WEIL-SPIRE, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:949 (June 4) 1926.

Laederich and Weil-Spire refer to a case of acute tuberculosis in a young woman with syphilis acquired eight months before. The tuberculous lesions

became highly destructive within four weeks terminating fatally in the sixth week. They have found only five instances on record of tuberculosis with such a rapid course in subjects with recent syphilitic infection.

SEASONAL DESQUAMATION OF HANDS AND FEET. M. FAVRE and J. GATÉ, J. de méd. de Lyon **7**:267 (May 20) 1926.

In one of Favre and Gaté's three patients, desquamation of the hands had been recurring every spring for ten years, lasting each time about four months. A second case was observed in a young girl, and the third in a roentgenologist. The affection is characterized by pseudovesicular elevation of the epidermis and desquamation, each patch with a well defined margin. The affection is sometimes located also on the soles. It resembles dyshidrosis in that the latter presents areas of desquamation in the terminal stage. Excellent results were obtained with daily applications of iodine. The hands were washed with hot water every morning, then rubbed with glycerin and swabbed with iodine. The affection disappeared in from a few days to two weeks; it had proved rebellious to all previous treatment. It is possible that the affection may be caused by a fungus, but examinations to date have been negative.

MALARIAL TREATMENT IN MENTAL DISEASE. A. MARIE, Rev. de méd. de Paris **42**:997, 1925.

Marie reports success in 35 per cent of his 236 cases of general paralysis given malaria treatment. He does not approve of restricting the benefits of induced malaria to well established cases of general paralysis. In all the psychoses in his asylum service, a positive Wassermann reaction was obtained in 24.78 per cent of 234, excluding the general paralysis cases. This unsuspected prevalence of a syphilitic factor justified application of the malaria treatment in other than paralysis cases, and this has been systematically done for several months in postencephalitic parkinsonism, dementia praecox and epilepsy. It is too early for general deductions, but the facts already observed indicate that the cases in which benefit has been observed were always psychoses influenced to a certain degree and more or less indirectly by a syphilitic taint. Every day brings more evidence of the participation of syphilis in the development of psychoses, either by upsetting the endocrine balance, or by distorting the development of the fetal nervous system or of the final myelinization at puberty (dementia praecox). Malaria treatment may offer a means of correcting these abnormal tendencies in congenital syphilis and in syphilis acquired later. It seems to be especially promising when a warning lymphocytosis in the cerebrospinal fluid indicates that irruption of the spirochetes is impending. The countries in which general paralysis is rare seem to be those in which malaria is endemic. It is possible that malaria infection modifies the tissues in such a way that the spirochetes are kept in or pushed back to the ectoderm. The question now is to detect impending and incipient general paralysis. A full bibliography is appended.

RATIONAL TREATMENT OF EXTERNAL CANCER. J. ARCE ET AL., Bol. d. Inst. de clin. quirurgica **1**:269 (Dec.) 1925.

Arce, Squirru and Nicolini relate that 100 of a series of 263 cancer patients were treated with radium, and that twenty-one of the fifty-nine skin cancers have been cured for four years to date, as also thirteen of the twenty-seven lip cancers, and one of the three mammary cancers. Thirty-two photographs

accompany the article. Recurrence or aggravation was observed in twelve cases, and three of the patients have died since. In one of the sixty-five mammary cancer cases a complete cure was realized with electrocoagulation; three of the women have died of the fifty-four treated by mammectomy.

Syphilis in Gynecologic Clinic at Rio de Janeiro. Nelson Barbosa, Brazil-med. **1**:43 (Jan. 23) 1926.

Barbosa has had the Wassermann test applied to every woman entering the clinic during the last seven years. A positive reaction was obtained in 37.9 per cent in 1921, but the proportion has dropped since to 25.2 per cent.

Llama Serum in Treatment of Syphilis. E. Chabroux, Semana méd. **1**:377 (Feb. 25) 1926.

Chabroux gives the details of twelve cases of syphilis in which treatment was by Jáuregui and Lancelotti's method with an antiserum derived from llamas. In only one case were the favorable results more than briefly transient, and the Wassermann reaction persisted positive in all.

The Cure of Leprosy. A. Paldrock, Dermat. Wchnschr. **82**:597 (May 1) 1926.

Five patients were discharged from the Dorpat leper hospital clinically and bacterioscopically well after less than two years' treatment with carbon dioxide snow. Paldrock's theory is that freezing sets antigens free, with resultant formation of antibodies, and an active immunization is thus obtained. Bismuth therapy was combined with the carbon dioxide snow treatment in the last case, and the curative processes were greatly accelerated.

Skin Tests with Dandruff. W. Storm van Leeuwen et al., Klin. Wchnschr. **5**:1023 (June 4) 1926.

Storm van Leeuwen, Bien and Varekamp describe the preparation and standardization of an extract from human dandruff. They obtained with it positive skin reactions in patients with allergic diseases, especially asthma. Some of the extracts are nonspecific, but may be cleaned by ultrafiltration. They believe that the dust and various micro-organisms contained in the rooms are present in the dandruff, and account for its action.

Treatment of Roentgen Ulcer. F. Franke, Med. Klin. **22**:805 (May 21) 1926.

Franke acquired a roentgen-ray ulcer on his finger. It resisted treatment until he applied locally diphtheria antitoxin, although there were no diphtheria bacilli on the ulcer.

The Brain After Malaria Treatment. G. P. Frets, Nederlandsch. Tijdschr. v. Geneesk. **1**:1988 (May 15) 1926.

Frets gives the details of ten cases, all showing that the changes in the brain differ from those found in untreated cases. The microscope confirms that the anatomic benefit from the malaria treatment may parallel the clinical and serologic benefit, but like these is not constant. The special features of the general paralysis cortex still persist, although much less pronounced. The change for the better was least distinct in the one case in which the therapeutic infection had been with relapsing fever.

Society Transactions

PITTSBURGH DERMATOLOGICAL SOCIETY

Fifth Annual Meeting, May 26, 1926

LESTER HOLLANDER, M.D., *Presiding*

FOX-FORDYCE DISEASE. Presented by DR. GUY and DR. JACOB.

A colored woman, aged 22, presented a pruritic eruption limited to the axillae and pubis. The eruption, of eight years' duration, comprised discrete, firm papules with the additional factor of a loose fold of skin in the right axilla, suggesting dermatolysis. Section revealed the usual dilated coil glands with hyperkeratosis of the outlets of gland ducts. The patient also had cystic ovaries and a chronic salpingitis.

DR. GUY: The case improved under roentgen-ray therapy. It is the first case I have seen do so.

ADENOMA SEBACEUM (PRINGLE TYPE). Presented by DR. CRAWFORD.

W. M., aged 18, a colored youth, for the last ten years had been developing innumerable soft and semisolid, round, globular reddish elevations over the anterior portions of each cheek, and scattering over the chin, forehead and nose. A few similar lesions were on the scalp and the upper portions of the trunk. They were markedly telengiectatic. The mentality was low, and he suffered from epileptiform convulsions. A roentgenogram of the pituitary fossa revealed a slight enlargement of the posterior clinoid process.

DISCUSSION

DR. HEIMAN: This is a large sized adenoma sebaceum. I would consider Reckinghausen's disease, a marked form of Recklinghausen's disease. The lesions look pedunculated. The mentality of the patient is low, and the relationship of the disease to inferiority is almost an axiom.

TWO CASES OF EPIDERMOLYSIS BULLOSA IN SISTERS. Presented by DR. WERTHEIMER.

A. D., a girl, aged 3 years, presented on the flexor and extensor surfaces of, and between, all the fingers and toes, numerous small pinhead to pea-sized vesicles and erythematous, scaly, denuded areas. Several pea-sized to half-dollar sized erythematous, vesicular and pustular areas which had become secondarily infected were seen on the arms, knees, elbows and extensor surfaces of the lower extremities. In several of these areas were groups of small pinhead milia-like bodies. Both thumb nails were markedly thickened.

S. D., aged 5 months, a sister of the preceding patient, presented at her first visit small bullae on the fingers and toes. At a later visit most of the vesicles had disappeared and there remained small pea-sized areas, made up of pinpoint to pinhead milia-like bodies.

UNUSUAL SKIN AND MUCOUS MEMBRANE LESIONS APPARENTLY DUE TO A YEAST. Presented by DR. GUY and DR. JACOB.

A boy, aged 6 years, had developed an eruption following whooping cough at the age of 14 months. He had improved several times, but the condition had never entirely cleared. On the elbows and knees were sharply marginated crust-covered lesions on an erythematous base — at times the crust had been dry, gray, and mortar-like, and at others the surface was moist. A marginal blepharitis was present and a marked photophobia due to an ulcerative keratitis was noted. The lips and mucous membranes were swollen, as were the mucocutaneous junctions at the nose and anus. Near the finger nails, evolution of crusted lesions had left a verrucous surface after subsidence of the inflammatory process. When first seen by the presenters he ran a constant low grade temperature and had a constant leukocytosis of between 12,000 and 15,000. Tissue section revealed that the process was superficial with the most notable change in the corneous layer, which was markedly thickened and contained many double contoured highly refractile bodies. There was some acanthosis with edema and a moderate lymphocytic infiltration with edema of the pars papillaris of the corium. Culture revealed a fungus which was tentatively classified by Dr. Fred Weidman as a cryptococcus, and is being studied further by him.

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. BEINHAUER.

Miss H., aged 22, unmarried, presented an eruption on the knees and elbows following vaccination, of twelve years' duration. The first eruption cleared and was followed by the appearance of reddish-yellow nodules, two months later, on the elbows, and still later on the knees. There were no subjective symptoms. About five years ago similar growths were noticed on fingers, toes and Achilles' tendons. During the last two years the eyelids have shown xanthomatous changes. The patient stated that one sister had similar lesions and the other sister had hyperglycemia. The family history was negative for diabetes.

A CASE FOR DIAGNOSIS. Presented by DR. BUSMAN and DR. SCHWARTZ.

A boy, aged 5 years, presented a small movable tumor mass involving the outer margin of the left eye. The lesion was about the size of an almond, was freely movable beneath the skin, slightly irregular on palpation and non-inflammatory, and there was a slight perceptible depression in the underlying frontal bone. The condition had been present, apparently, since birth and had caused no symptoms.

DISCUSSION

DR. PELS: My impression was that this lesion is a dermoid cyst. It is located in that part of the face in which probably two bone structures come together. It would be interesting to perform an operation and report the results.

DR. HOLLANDER: I would diagnose the condition as lipoma.

DR. PELS: The diagnosis that I made is based on the fact that the tumor is deep-seated and also cystic.

DR. BUSMAN: My personal impression is that this lesion is a cyst. The surgeon who was to take it out thought it was a lipoma.

VON RECKLINGHAUSEN'S DISEASE (EARLY AND LATE). Presented by DR. GUY and DR. JACOB.

A woman, aged 46, presented the usual soft nodular and pigmentary types of lesions, and a daughter, aged 12 years, presented irregularly distributed, various sized and shaped, brown, macular, pigmentary lesions. The mother had developed tumors during the preceding seven years, having had pigmentary lesions similar to those of the daughter from early childhood. The condition in the daughter was of two years' duration.

DISCUSSION

DR. WEISS: We have long been interested in this type of case. You will recall that Dr. Engman and I called attention to the curvature of the spine associated with many of these patients. The work of Brooks and Lehman has accounted for this curvature which is apparently compensatory. These observers found that in many cases of neurofibromatosis, cysts could be demonstrated by roentgenograms, chiefly in the long bones, and occasionally in the bones of the skull. This fact, while published several years ago, is generally unknown to dermatologists. We recommend that roentgenograms be made of the long bones in all of these cases.

URTICARIA PIGMENTOSA (ACQUIRED). Presented by DR. WERTHEIMER.

Miss M. R., aged 18, presented over the entire body, including the face, pinhead to pea-sized brownish macules which on scratching elicited wheals. The disease followed chickenpox four or five years before. There was no itching. No other members of the family were affected.

DISCUSSION

DR. WEISS: A rather curious fact about this patient is that she took phenolax tablets almost every night for the last two or more years. Of course, the type of pigmentation here presented is not that ordinarily seen with typical phenolax eruptions, but one wonders whether or not the phenolax played any part.

ADENOCARCINOMA. Presented by DR. GUY and DR. JACOB.

A woman, aged 40, presented a firm subcutaneous plaque about the size of a quarter over the right malar eminence. The surface was rather atrophic and telangiectases were present. The lesion was of five years' duration having been treated with carbon dioxide five years ago with a resulting white scar extending from the lower border of the nodule. Biopsy showed carcinoma with an adenomatous structure.

ERYTHEMA MULTIFORME CHRONIC. Presented by DR. GUY and DR. JACOB.

A tin mill foreman, aged 56, presented an eruption of various sized and shaped macular, papular and figured lesions, of six months' duration. The lesions were scattered irregularly over the entire body including the face. The onset was gradual and there had been an associated loss of 20 lbs. (9 Kg.) in weight. Blood examination showed a moderate secondary anemia. The liver was considerably enlarged and very hard. The condition was somewhat improved by regulation of diet and administration of salicylates. A section was presented.

DISCUSSION

DR. MICHELSON: I believe that this is a case of sarcoid of the disseminated type. The lesions are rather rapid in their evolution and also are regressing rapidly, leaving scars which appear to be atrophic. Some of the lesions have regressed without leaving even a trace. The microscopic picture is not that of sarcoid in its advanced stage, but is not unlike the pathologic condition described by Kyrle in the eruptive stage.

DR. OLIVER: I agree for the most part with Dr. Michelson. I have recently had under my care a woman who presented lesions similar to these. In the early stage of her disease, the lesions were similar to erythema multiforme. They appeared in crops. When one crop disappeared, another would appear. Later the lesions took on an altogether different appearance, and histologic examination showed a tuberculous architecture. Sarcoid was our final diagnosis.

DR. HIGHMAN: I agree with the diagnosis of the presenters.

DR. GUY: Regarding the scarring, the old lesions which have undergone spontaneous evolution have not left scarring. After the lesions have disappeared the scar smooths out so that it is almost impossible to tell where a lesion had been. The man worked in a tin mill, and it is possible that the condition is toxic.

POIKILODERMA ATROPHICANS VASCULARE. Presented by DR. WERTHEIMER.

B. L., a man, aged 43, a Russian by birth, presented a generalized red, scaly, atrophic and pigmented eruption. On the lower extremities where the eruption was most pronounced, from the thighs to the feet, there was practically one continuous area, including the entire circumference of the extremities, which showed redness, ectasia, wrinkling, pigmentation and marked scaling, the latter being most pronounced on the legs, and resembling ichthyosis. The picture in all resembled that of a roentgen-ray burn. The neck, upper extremities and abdomen showed various sized and shaped similar patches, the lower part of the abdomen being quite pigmented. On the back and buttocks a similar condition existed, the newer patches being brownish, without scaling or ectasia. There was no infiltration of any of the lesions, and severe itching was present at times. There was a general glandular enlargement. The scalp was scaly, the hair lusterless. Physical examination, chemical examination of the blood, blood count, blood Wassermann test and urine examination gave negative results. Biopsy did not show any definite picture. The disease began seven years before on the right leg as a "lump," the size of a silver dollar, shortly turning red. The condition spread to the rest of the body, the trunk being involved only for the last four years. The patient stated that there is always much improvement in summer, scaling being slight at this time.

NOTE.—The foregoing picture was seen at the patient's first visit; subsequently, the picture showed more redness at one time, pigmentation predominating at another time. At other times scaling was more pronounced. At the time of presentation, over the deltoid regions, neck and forearms, eczematous-like patches existed. The face and forehead now show areas of redness and scaling.

DISCUSSION

DR. WERTHEIMER: In answer to Dr. Stillians, no roentgen-ray treatment has been given. Mycosis was also considered in the beginning. At that time there was a skin condition of scaling, pigmentation and atrophy, with marked

wrinkling of the skin. As time went on, the patient complained of itching, which, according to Sutton, may be marked or not. In looking at the legs and then at the body the picture sometimes changed — sometimes there was marked pigmentation, then some redness, but scaling and itching remained. Then, too, the condition started as a little tumor on the leg nine years ago.

DERMATITIS EXFOLIATIVA. Presented by DR. WERTHEIMER.

F. F., a man, aged 27, married, for the last five months had presented a universal, red, papery-like, scaly condition of the entire body, with infiltration of the skin. There were a marked general glandular involvement and chilly sensations of the body. He had been subject to psoriasis for the last seven years.

DISCUSSION

DR. O'LEARY: In the treatment of exfoliative dermatitis secondary to psoriasis, we have found that the use of continuous colloid tub baths, as suggested by Dr. Wile, is a valuable therapeutic adjunct. We recently had a patient with generalized psoriasis who has averaged approximately twenty hours a day for the last seven weeks. The pruritus has been materially benefited, and there has also been definite improvement in the dermatitis. It is not often that we are able to keep patients in the tub for this length of time, but it affords much relief if they are able to remain in the bath long enough.

DR. STILLIANS: I know of two cases which were stubborn and which have shown remarkable improvement after a few days in the continuous bath.

DR. MITCHELL: I find that sodium hyposulphite, intravenously, gives almost as remarkable results in cases of exfoliative dermatitis not due to arsphenamine as in those due to arsphenamine.

DR. PELS: One year ago, I had a patient suffering with a severe exfoliation following what was considered psoriasis. The picture was much the same as that of the patient seen today. She was a woman, aged approximately 55, she was otherwise in excellent health. She was sent into the hospital for rest and for study. The treatment consisted of injections of sodium thiosulphate, intravenously, without effect, and finally autoserum, intravenously. After a number of weeks there was definite improvement; the patient left the hospital almost well, and when seen recently she showed no evidence of the exfoliation and should be considered cured.

DR. WEISS: I had the opportunity of observing a patient with dermatitis exfoliativa following psoriasis, who made a complete and rapid recovery from that condition on treatment with intravenous foreign protein. The protein used was typhoid vaccine in sufficient dosage to produce a chill and high fever every five or six days.

DR. WERTHEIMER: Concerning medication, the patient has had it for six months with little or no improvement. In regard to sodium hyposulphite, I cannot say that it did any good, although Dr. Mitchell recommends it. I gave it to a patient, and I do not know whether it did him good or not. The man died. I am now giving this patient sodium hyposulphite.

POIKILODERMA. Presented by DR. CRAWFORD.

K. K., a man, aged 32, American, for the last two years had presented gradually increasing rounded or oval areas, ranging from a few to several

centimeters in diameter, on the anterior and posterior trunk and the upper arms and thighs. These areas were a peculiar brownish red, some lighter, some darker, and in an oblique light appeared to consist of fine lichenoid papules. In some areas there was a fine atrophy, and in these the capillary dilatations were more marked and there was a fine furfuraceous scaliness. A few years ago, he had an enlarged thyroid removed. He was of good physique and health and weighed 188 pounds (85 Kg.).

DISCUSSION

DR. HIGHMAN: Last year I had occasion to see this patient, and at the time that lesion did not look as it looks today. I thought the case was one of parapsoriasis. I do not think I could make such a diagnosis today. I do not understand the atrophy, the telangiectasia, the infiltration, if this is parapsoriasis. On the other hand, I do not feel satisfied with a diagnosis of mycosis. Neither does it look like poikiloderma.

DR. STILLIANS: Both these cases have atrophic spots with pigmentation, although the pigmentation is more marked in the previous case. It seems to me that they are very much alike.

DR. LAVENDER: I recall having seen a similar case, some time ago, in one of the European clinics. The discussion, at that time, was pertinent in regard to the atrophic areas. The diagnosis of the Brocq type of parapsoriasis was decided on. One of the clinicians there said that he had seen several such cases.

DR. RAVOGLI: Looking at the case carefully, you can see the small atrophic spots of the skin.

DR. CRAWFORD: I would be entirely at a loss to make a diagnosis. I thought of parapsoriasis atrophicans, but could not make that diagnosis. No roentgen-ray treatment has been given. The patient does not complain of itching. There is no infiltration. The lesions are fine and atrophic.

GRANULOMA COCCIDIOIDES. Presented by DR. GUY and DR. JACOB.

A man, aged 36, pricked the thumb of his right hand with a cactus thorn while under treatment for tuberculosis at San Diego, Calif. A few days later an inflammatory swelling was noticed at the site of injury, which later softened and was incised, draining a moderate amount of pus. Gradually a row of nodules developed to the shoulder, each undergoing a course similar to the first lesion. About six months later, a large rather firm inflammatory mass involving the right knee developed. This broke down forming numerous sinuses, and three nodules appeared on the inner side of the thigh, proximal to the mass at the knee. At the time of presentation, many discharging sinuses and scars marked the sites of lesions, new subcutaneous nodules having been present from time to time. *Coccidioides immitis* was recovered by Dr. A. J. Bruecken, and the case was reported by Dr. Colwell and Dr. Bruecken before the Pittsburgh Academy of Medicine.

Coccidioides immitis was recovered by Dr. A. J. Bruecken, and the case was

Thirty-nine other cases were exhibited but not reported.

FRED M. JACOB, M.D., Secretary.

AMERICAN DERMATOLOGICAL ASSOCIATION

Golden Anniversary Session, May 27, 1926

ANDREW P. BIDDLE, M.D., *Presiding*

CLINICAL MEETING

A CASE FOR DIAGNOSIS. Presented by DR. KLAUDER and DR. DENGLER.

A man, aged 35, presented an extensive ulceration on the upper part of the left side of the chest and the axilla, of two years' duration. He had lived in Panama for thirteen years prior to 1923. The patient had electrical burns on the arms, but the ulceration had started in the axilla, not at the site of the scars resulting from the burns. He had had a severe infection of the little finger prior to the onset of the ulceration. His general health was good, and the physical examination was essentially negative. There had been several negative Wassermann reactions. The histologic section presented showed a tuberculoid picture with foreign body giant cells (Weidman). For treatment he had received neo-arsphenamine, calcium by mouth and parathyroid gland. Local therapy had consisted of a variety of antiseptic dressings, ultraviolet ray and sunlight.

A CASE FOR DIAGNOSIS. Presented by DR. STOKES and DR. WEIDMAN.

A man, aged 42, had an eruption of fourteen months' duration, of undetermined origin. He gave a history of recurrent discharge from a gland in the right cervical region for two years previous, healing resulting after each attack until the fourth, in which the lesion proceeded to spread. The general examination gave negative results except for four carious teeth, which were removed in July, 1925.

Smears showed abundant diphtheroids on several examinations. Cultures were negative for fungi. Sections from four different biopsies revealed acute and subacute inflammatory changes. One section showed endothelioid infiltration around a sinus, compatible with tuberculosis but not diagnostic. Three different guinea-pig inoculations were negative. The blood Wassermann reaction had been repeatedly negative, and a provocative test was negative. Blood counts and urinalysis gave negative reactions.

For treatment he had received ultraviolet light (air cooled) locally and systemically, with one course of neo-arsphenamine for nonspecific effects. The ulceration had been approximately 75 per cent healed, but relapse and extension had since occurred.

DISCUSSION

DR. SUTTON: Case 1 looked to me like an example of so-called "tropical ulcer." This is rather an elastic term, but we see instances of the disorder more often in Central and South America than elsewhere, although I have encountered examples in various parts of Africa, and in Southern Asia. The bacteriology of the lesions has been exhaustively investigated by Stitt and by Castellani. Admiral Stitt thinks that the lesions are due to the symbiosis of several organisms, no one parasite being responsible.

The general condition of the patient has much to do with the chronicity of the disorder. It is common in South Africa, and I once saw a large and typical group of cases which were under the care of Dr. R. W. Burkitt of Niarobi.

Burkitt is a strong believer in the use of tonics, and similar constitutional remedies. I have found constant irrigation with mild antiseptics, particularly Dakin's solution and potassium permanganate, best.

DR. WALLHAUSER: I would suggest the diagnosis of tuberculosis, having had a case which was clinically similar. This was reported in Dr. Fox's atlas under scrofuloderma.

The main feature was an extensive ulceration with soft, cheesy, raised, undermined borders, gradually extending until both sides of the face and neck became involved. After several years, pulmonary tuberculosis developed, and the patient died following a reaction from a small dose of tuberculin.

DR. HOWARD FOX: In the case with the axillary ulceration, have they ruled out the diagnosis of malingering?

DR. WHITEHOUSE: The clinical picture in the case of Dr. Stokes appeals to me as tuberculosis, and a sister had a similar ulceration on the leg. The father died of tuberculosis, and the clinical picture of this case impressed me with the possibility of it being of that nature.

DR. STOKES: In these cases that Dr. Weidman and I have presented we have thought of tuberculosis not once but many times. We have made every effort to substantiate this diagnosis, and have treated the patient for tuberculosis with the quartz lamp and both locally and systemically. We have not used tuberculin, but have had no results with anything else. The first patient was under constant supervision. He has no object in malingering for he is not the recipient for benefit of any kind, and we could not substantiate that diagnosis. I was interested in hearing Dr. Sutton speak as he did for I think there is a group of indefinite lesions seen in temperate regions as well as in tropical, which resist treatment and which might be called "malignant granuloma," to use a phrase coined by a British observer. Iodine intravenously (Lugol's solution and tincture) has been used in South America and India in these cases. We expect to try it, and also antimony potassium tartrate, and to use radium and electrodesiccation locally.

DR. WEIDMAN: The histology in this case was that of any nonspecific inflammatory infiltration. We have had three or four biopsies. In one instance we found an infiltration around a sinus and were suspicious of tuberculosis, but three inoculations of guinea-pigs gave no positive result, and the last time a particularly large amount of material was injected. The only organisms found at any time were cocci and diphtheroids. I feel strongly with Dr. Sutton and Dr. Stokes that there is a group of dermatoses simulating tuberculosis which are not caused by *Bacillus tuberculosis.* The relation between the diphtheroids and *Bacillus tuberculosis* has been discussed more or less at length, in connection with Hodgkin's disease, for instance. Our patient should be relieved of any suspicion of malingering for he has a sinus that extends all the way to the maxilla.

DR. KLAUDER: In the case I presented there is no reason to suspect malingering. It is not a compensation case. The patient is incapacitated from his work as an electrician. At the Dallas meeting of the American Medical Association, Dr. Castellani showed a few lantern slides of a similar ulceration which he stated was due to a larva. This fits in somewhat with Dr. Sutton's remarks.

ACUTE LYMPHATIC LEUKEMIA. Presented by DR. STOKES and DR. WEIDMAN.

A boy, aged 16, whose occupation was melting lead type in a printing shop, had a generalized papular eruption, with petechial lesions, which began on

the outer surface of both legs in January, 1926, associated with a pruritus. Many of the papules were firm, with an almost translucent sheen. Some had necrotic centers. None contained fluid. The eruption soon involved the entire legs. He received vaccine treatments from his physician, and the eruption spread to the face, back, arms, hands and trunk. It began to fade under continued vaccine treatment, but the pruritus persisted. The patient was admitted to the medical service of the University Hospital for the treatment of swelling and pain in the ankles, weakness and anemia.

Physical examination showed cardiac hypertrophy, pneumonic processes of both lower lobes, and enlarged axillary nodes. The eyegrounds were suggestive of leukemia. A roentgenogram of the chest was negative. The blood urea nitrogen was 14 mg. per hundred cubic centimeters. The first blood count showed red blood cells, 1,680,000; white blood cells 23,700; hemoglobin content

Subsequent Blood Counts

4/5/26		4/12/26	
Red blood cells	2,180,000	Red blood cells	2,070,000
White blood cells	23,100	White blood cells	11,000
Hemoglobin content	49 per cent	Hemoglobin content	50 per cent
Neutrophils	27 per cent	Neutrophils	32 per cent
Lymphocytes	53 per cent	Lymphocytes	53 per cent
Transitionals	9 per cent	Transitionals	3 per cent
Eosinophils	10 per cent	Eosinophils	6 per cent
Myelocytes	1 per cent	Myelocytes	6 per cent
Nucleated red cells	4	Nucleated red cells	None
Oxidase stain	55 per cent		
Nongranular mononuclears			
4/22/26		**4/26/26**	
Red blood cells	1,910,000	Red blood cells	1,970,000
White blood cells	8,300	White blood cells	6,800
Hemoglobin content	41 per cent	Hemoglobin content	45 per cent
Neutrophils	30 per cent	Neutrophils	37 per cent
Lymphocytes	45 per cent	Lymphocytes	47 per cent
Transitionals	1 per cent	Transitionals	2 per cent
Eosinophils	12 per cent	Eosinophils	14 per cent
Myelocytes	11 per cent	Myelocytes	1 per cent
Nucleated red cells	1	Nucleated red cells	1

42 per cent. A differential count on April 1, 1926, showed neutrophils 18.5 per cent; lymphocytes 6.5 per cent (young); large mononuclears and transitionals 2 per cent; eosinophils 14.5 per cent; basophils 0; myelocytes 4.5 per cent; polychromatophilia +; anisocytosis +++; nucleated red cells, 2 in 200 cells.

The Wassermann reaction was negative. Biopsy revealed nothing more than a subacute diffuse dermatitis.

Transfusion was performed three times while the patient was in the hospital, but he continued to have an intermittent rise in temperature, with occasional nose bleed. Incision of an abscess in the right axilla showed pus with pure culture *Staphylococcus aureus-hemolyticus*. The patient was discharged from the hospital on May 2, 1926, with slight change in the condition.

DISCUSSION

DR. STOKES: The patient was a pale, sick boy with bad teeth, an infected mouth, a severe anemia and fever, who had been a consistent puzzle to us all. He first appeared on the medical service of the University Hospital, with a

high temperature and a blood count which every one thought indicated acute lymphatic leukemia. He then developed a mass of enlarged glands, which the surgeons incised. His condition was so poor that he was taken home, with the expectation of death within a few days. He is now in fairly good condition. We considered the leukemic possibilities suggested by the blood picture, and we thought of miliary cutaneous tuberculosis. My last word to my staff was, "When he comes to necropsy he will have miliary tuberculosis." He has not yet come to necropsy and is in pretty good condition. I do not see how any one can reach a definite diagnosis, but I am anxious to have the opinions of others.

DR. WHITE: I would suggest a diagnosis of dermatitis herpetiformis. The patient has a high leukocyte count and an itching eruption.

DR. WHITEHOUSE: I have had several cases of leukemia in which the patients had a dermatitis herpetiformis-like eruption. Dr. Fordyce informed me that he had seen one or two cases of the same type. I wonder whether this is not some type of leukemia simulating dermatitis herpetiformis. I think a biopsy might be of assistance, for Dr. Fordyce said that these patients showed the same kind of changes in the skin that are seen in leukemia.

DR. SCHAMBERG: I agree with the diagnosis of leukemia cutis. I do not believe that the lesions are vesicles. They are of translucent appearance, but when the finger is passed over them they are found to be firm nodules. I do not think the case could be regarded as prurigo nodularis for there is no thickening of the epidermis. According to the history, the boy had lymphocytosis, with over 23,000 white cells. I see no reason to set aside the diagnosis of leukemia cutis, although Dr. Stokes' alternate diagnosis might possibly receive consideration. I do not regard it as a case of dermatitis herpetiformis.

DR. GOLDENBERG: This case differs from similar cases only in its intensity. Whether the case is a true leukemid I do not know, but I do not see that it differs in its clinical aspect in anything more than intensity. I consider it prurigo lymphatica.

DR. COLE: I would suggest the prurigo exanthem of Hodgkin's disease.

DR. HIGHMAN: To my mind it is a case of leukemic infiltration of the skin which Dr. Schamberg and Dr. Stokes mentioned and Dr. Goldenberg emphasized. I can recall one case in which an eruption was the precursor of all the manifestations of leukemia. I think the sequence of events is the only thing that is peculiar in the case. In some instances the blood changes follow the other manifestations, and in others they precede them. Even though the other signs of leukemia are not present, I think the case nevertheless is one of leukemia.

DR. POLLITZER: This boy has a papular, nodular, pruritic eruption and a blood picture of leukemia. It seems to me that that is the complete diagnosis. However, I should like to hear from Dr. Weidman, who has examined the lesions histologically.

DR. WEIDMAN: Histologically there was nothing for or against tuberculosis, leukemia or a leukemid. There was simply a lymphocytic infiltration around the blood vessels; farther than this we could not go, because once the cells have been fixed and shrunken as in tissue, one cannot distinguish whether the cells are of the young type, such as are seen in lymphatic leukemia, or not. The report received from the hematologist (smears) was that there were many lymphocytes of the young type, but that does not constitute the diagnosis of acute lymphatic leukemia. Perhaps we could get out of this difficulty as

between leukemic eruption and the papulonecrotic eruptions of the skin if we remember that other organisms than tubercle bacilli may produce papulonecrotic lesions, and that there is such a thing as an acute infectious mononucleosis. I think that it was Dr. Guy who injected colon bacilli into a human subject and produced papulonecrotic lesions. This boy had a sore throat, and I do not see why we cannot stretch Dr. Guy's idea and include other organisms than colon bacilli, the mouth being the starting point of the whole condition. I think it possible that he has a "papulonecrotic Vincent's angina." Certainly there is nothing in the sections to indicate that the process is tuberculosis.

DR. STOKES: As far as the itching is concerned, we have inquired repeatedly of the patient and been told that it is not severe, but that it is worse at night. I have watched him in the ward, and he does not scratch himself much. I have not been able to make out anything like a dermatitis herpetiformis. No vesicles have appeared at any time.

LICHEN SCROFULOSORUM (?) OR SECONDARY FOLLICULAR SYPHILIS OR LATENT SYPHILIS. Presented by DR. STOKES and DR. WEIDMAN.

A negro, aged 27, presented an extensive, follicular papular eruption which was most pronounced over the lower part of the trunk posteriorly, with some tendency toward grouping and circinate configuration. He gave a history of a similar outbreak in November, 1925, in which there was spontaneous involution. He had had an associated subacute arthritis with cervical, inguinal and epitrochlear adenopathy.

Biopsy revealed typical tubercles in the papular lesions. Roentgenologic examination of the chest for tuberculosis gave negative results. The blood Wassermann reaction was positive.

The lesions showed no appreciable change after one injection of potassium bismuth tartrate intramuscularly.

DISCUSSION

DR. HIGHMAN: This case is astonishing. In the first place, it s rather surprising to find lichen scrofulosorum in the negro. This man does not seem to me to be the type of person in whom we expect that particular thing. Secondly, he seems rather old to have lichen scrofulosorum. Thirdly, we cannot consider it as lichen planus either clinically or because of the detailed pathologic report. I would suggest the possibility of considering it a case of lichen nitidus, despite the fact that the lesions are too large and too much elevated for lichen nitidus.

DR. STOKES: The case is interesting. A similar case in a white person was reported in the *American Journal of the Medical Sciences* within the last few months. I take issue with Dr. Highman's suggestion that lichen scrofulosorum is not likely to occur in the adult. It can be seen in the adult, and it seems to me that this is probably the diagnosis here. The late Dr. Fred Harris some years ago showed an excellent case of Sternberg's tuberculosis in a man, aged 40, in which this type of lesion was present. There was a variety of tuberculids all associated with generalized lymphatic tuberculosis.

PEMPHIGUS. Presented by DR. STOKES and DR. WEIDMAN.

A man, aged 69, a wood carver, was first seen in May, 1925, with a bullous eruption which was almost generalized, confluent in many places. He stated that it began in November, 1924. Blood cultures were repeatedly negative. He was given one month of Davis treatment in June, 1925, without improve-

ment. In August the treatment was again started and repeated for forty days, with slight improvement. In the middle of October, 1925, the patient developed hyperkeratosis of the palms and soles, suggestive of arsenical origin. No permanent improvement followed the Davis treatment. He then received ten injections of ascending doses of a 1 per cent solution of tartar emetin in December. When presented the patient had improved 95 per cent.

PRIMARY AND SECONDARY SYPHILIS. FRAMBESIFORM SYPHILID. Presented by DR. STOKES and DR. WEIDMAN.

A negro laborer, aged 25, entered the skin dispensary on May 21, 1926, presenting an eruption of discrete elevated, warty, papillomatous lesions, from 1 mm. to 2 cm. in diameter, in the bearded region of the face and in the scalp. Further examination showed a squamous eruption on the palms, and an involuting maculopapular eruption on the trunk and lower extremities. There were lesions on the penis similar to those on the face, with an involuting primary lesion, and generalized adenitis. Dark-field examination of the lesions of the face and penis was positive for *Spirochaeta pallida*, and the blood Wassermann reaction was strongly positive.

DISCUSSION

DR. WILE: Such lesions can occur in white persons as well as in the negro. I had a case in a white boy who came from the northern part of Michigan who had lesions identical with these. There were lesions on the feet and genitalia of frambesial character. The primary sore in this case and in mine was distinctly more elevated and had a definite frambesiform appearance. It was the most luxuriant field for spirochetes that I have ever seen.

DR. HAZEN: I have had sections from one of these cases, and there were no miliary abscesses.

DR. SCHAMBERG: One of the characteristics of frambesia is the finding in the epidermis of small abscesses containing spirochetes. In discussing the case of yaws presented by me before the American Dermatological Association a few years ago, a distinguished Brazilian professor who had a large experience with yaws emphasized this point. In Dr. Stokes' case I understand that spirochetes were abundant in the local lesions. This is more commonly seen in yaws than in syphilis. In the studies of one case we were strongly impressed with the fact that the spirochete of yaws in smears and sections was more difficult to stain than *Spirochaeta pallida*.

LUPUS ERYTHEMATOSUS. Presented by DR. SCHAMBERG and DR. WRIGHT.

A man, aged 55, had an extensive lupus erythematosus of the face, of twenty-five years' duration. He had received deep roentgenotherapy to the deep glands, in accordance with the technic advised by Goeckerman, with slight benefit, but had improved steadily on intravenous injections of gold compounds since December, 1925. At present there was considerable scar formation involving both cheeks and the nose, with a few small scattered islands of active lupus erythematosus.

LUPUS ERYTHEMATOSUS. Presented by DR. SCHAMBERG and DR. WRIGHT.

A girl, aged 3, had developed a small patch on the cheek at the age of 7 months, which had spread until it involved the nose and adjacent parts of the cheeks in a butterfly-shaped patch. There was no history of tuberculosis

in the family. The case was shown because of the extreme youth of the patient at the time of the development of the condition.

LUPUS ERYTHEMATOSUS. Presented by DR. KLAUDER.

A woman, aged 56, had had the disorder for forty years. She was presented to show the effects of treatment with a gold compound, which had been injected intravenously in 0.025 Gm. doses at weekly intervals for the last five weeks. Prior to these injections, the patient presented a bright red patch of lupus erythematosus on each side of the face. On the right side the lesion extended from just below the eye to the jaw; on the left side from above the eye, including the upper and lower lids, to the jaw. The involved areas were edematous, and the left eye was closed because of the swelling. When the case was presented there was about 50 per cent improvement. There was considerably less redness, at places it was absent, and the swelling had disappeared. The lesion on the right side of the face had decreased in size. A lotion had also been employed. The tonsils were infected and were to be removed.

LUPUS ERYTHEMATOSUS. Presented by DR. SCHAMBERG and DR. WRIGHT.

A woman, aged 28, was presented to show the effects of treatment with gold thiosulphate on lupus erythematosus. The disorder had been present for ten years, spreading until it involved the nose, entire cheeks, chest and upper arms. She received two intravenous injections of a gold compound weekly from Oct. 1, 1925, to February, 1926, with steady improvement. For the last two months she received gold thiosulphate intravenously. The treatments were stopped because of a reaction, and there was a cessation of improvement. The injections were later resumed. A considerable part of the eruption remaining when the case was presented represented the results of former excessive roentgenization.

DISCUSSION

DR. GOLDENBERG:. I am inclined to doubt the diagnosis of lupus erythematosus in Dr. Klauder's patient. I think it is lupus vulgaris of the Leloir type. I believe I saw distinct lupus nodules within the involved area.

DR. SWEITZER: I agree with Dr. Goldenberg in the diagnosis of lupus vulgaris in this case. The patient had lesions on the cheeks that resembled lupus vulgaris, and on the hands lupus erythematosus.

DR. KLAUDER: The duration of the lesion on the face of the patient I presented is forty years. If the disorder is lupus vulgaris one would expect a much different picture than is now presented. There are a few lesions somewhat suggestive of nodules of lupus vulgaris. On the whole I regard the lesion as lupus erythematosus.

DR. HOWARD FOX: I wish Dr. Klauder would tell us about the gold therapy.

DR. SCHAMBERG: We have presented three cases of lupus erythematosus, two of which are shown to demonstrate improvement under treatment with gold compounds. In the case of the man who had extensive patches on the cheeks, of fifteen years' duration, a 75 per cent improvement has taken place. There is a little tendency to relapse as a result of interrupted treatment. The second patient with a most severe eruption of twenty years' duration shows, in addition, extensive chronic changes in the skin due to inexpert roentgenotherapy. There has been a remarkable improvement and the favorable progress is continuing.

We have been much interested in the effects of gold in tuberculosis and have been experimentally studying the subject in our research institute during the last year. We have made a number of gold compounds but are now particularly interested in two, one gold protein compound in solution and the other, the gold and sodium thiosulphate which, under the name of "sanocrysin," has been extensively studied by Møllgaard of Copenhagen. The first compound is tolerated in enormous doses in the experimental animal, 300 mg. per kilogram. We give from 5 to 10 cc. once or twice a week, intravenously, to human subjects. The other compound has been used by us in doses of from 100 to 200 mg. intravenously every five to seven days. The latter must be used with care in wide spread and active cases, as in such cases extension of the eruption may be stimulated. Gold is, therefore, a double-edged sword in lupus erythematosus, accomplishing great good in the majority of cases but capable of doing harm. In many cases we fortify the treatment by administering at the same time $\frac{1}{15}$ grain (0.004 Gm.) of gold chloride by mouth three times a day. A gold dermatitis similar to arsphenamine dermatitis may occur in some cases. I believe with Møllgaard that gold has a specific influence on the tubercle bacillus and some of the effects are similar to that of tuberculin.

I realize that the tuberculous nature of lupus erythematosus is not universally admitted. I am the more inclined to regard the disease as essentially of tuberculous nature by reason of the apparently specific effect of gold on the process.

The young child was presented because of the extreme youth of the patient. This is the earliest case of lupus erythematosus presenting butterfly patches that I have ever seen.

DR. ORMSBY: The case of the child with lupus erythematosus is of much interest to me as I have seen a similar one. In the patient presented today the disorder began at the age of 7 months, which is extraordinary. We presented a patient, aged 5 years, with what we thought was lupus erythematosus, and the lesions were similar to those in this child today. As I recall, the lesions in our case began at the age of 3 years. The two cases are identical and I believe both are examples of lupus erythematosus.

DR. HIGHMAN: I think the case of the child is particularly illuminating, for with the onset at 7 months we can rest assured that the child did not get the lupus erythematosus from an apical abscess in the teeth.

XERODERMA PIGMENTOSA. Presented by DR. SCHAMBERG.

A boy, aged 17, was first seen by Dr. Schamberg at the age of 1 year, with a xeroderma pigmentosum, and has been under his observation since that time. Many epitheliomas had been removed during this time by the cautery, the roentgen ray and radium. At the time of presentation there were only two or three small epitheliomas, but a great deal of pigment and scar formation. One brother had died of the same condition. The mother and father were first cousins.

DISCUSSION

DR. WILE: I wish to call attention to a somewhat unusual feature in this case which is different from anything I have seen or heard of. Most cases of xeroderma pigmentosum have occurred in the children of mothers with blond or red hair. This boy stated that his mother was distinctly dark and that no member of the family was freckled. I think this is rather different from most cases of xeroderma pigmentosum.

DR. GUY: Dr. Highman and I, while visiting a coal mine, were discussing a case of urticaria pigmentosa in a man who noticed his sensitivity to light early in life and obtained work in the coal mine, where he worked until he was 25. He was then taken into the army and within a few months developed active manifestations of urticaria, including epitheliomas. This man appeared in my service at Camp Travis, Texas, during the late war. He was discharged on a surgeon's certificate of discharge and later wrote that he was free from the condition. This is a point worth remembering from a therapeutic standpoint.

DR. POLLITZER: Did the brothers and sisters of this boy show any sensitiveness to light or any changes in the skin? I think it is worthy of comment that these persons usually have a history of undue exposure to sunlight in infancy. At a recent meeting in Atlantic City some persons spoke of the good effect of exposure to the sun in various diseases, and advised free exposure of infants and children. They were thinking of the effect on the calcium metabolism in rickets. Infants should be exposed to direct sunlight with great caution; overexposure may result in the gravest injury.

DR. SCHAMBERG: This patient was presented for the purpose of indicating that many of these patients may be kept alive for years by close surveillance and treatment. We have removed hundreds of epitheliomas from the face and neck. The patient had a brother who is now dead, and I think he died of the same condition. The great interest in this case is that the parents are first cousins. This history is obtained sufficiently often to make it incumbent on us to go into the family history carefully. I think there is no doubt that consanguinity plays a large part in these cases, but that still leaves the question open as to biochemical substratum through which the clinical changes are brought about.

DR. ALDERSON: I have a photograph of a little girl with xeroderma pigmentosum in the exhibit at the hotel. This patient's paternal grandmother and mother are blood relatives. All the family are brunettes. The patient's lesions appeared first on the body when she was only a few weeks old, and soon came on the face. Another case I had occurred in a young Japanese child. There was no history of consanguinity there, but it is difficult often to determine the history of Japanese families.

DR. COLE: I have one of these cases under observation at present, and in that case the parents are first cousins. This child developed one area of malignancy and we used an ordinary dose of radium, which caused a severe reaction. The next time we used a much smaller dose than we would ordinarily use in these cases. Dr. Wende told me he had the same experience with one of his cases. The dose must not be so large as is required ordinarily.

A CASE FOR DIAGNOSIS. Presented by DR. SCHAMBERG.

A man, aged 47, had had an erythema of the skin for eight years, accompanied by a generalized exfoliation but little itching. The condition had been much worse during the past year, and he had recently developed numerous ulcers over the trunk and extremities. There was some enlargement of the glands in the axillae and inguinal region.

A recent blood count showed 2,850,000 erythrocytes, 9,100 leukocytes, hemoglobin content 45 per cent, polymorphonuclears 79 per cent and small lymphocytes 21. He had never had leukocytosis. Cultures from the ulcers showed *Staphylococcus aureus* and diphtheroids.

DISCUSSION

DR. SCHAMBERG: I regard the case as one of mycosis fungoides. The examination of the excised gland failed to show any evidence of Hodgkin's disease or of leukemia. The man develops crusted areas under which deep ulceration takes place. As I recall, the blood picture was negative.

A CASE FOR DIAGNOSIS. Presented by DR. CORSON (by invitation).

A man, aged 48, had a disorder which was said to have begun about fifteen years ago as a small spot on the left side of the neck. It was red, practically uninfiltrated and without noticeable scales. It spread slowly, reaching a diameter of from 4 to 5 inches (10 to 12 cm.), always remaining circular. Four years ago a similar area appeared on the right temple, one year ago on the right side of the forehead, and four months ago on the left cheek. All areas had similar characteristics, including a superficial, scarlike center and a definitely raised margin, which had flattened down under roentgenotherapy. Where the scalp was affected there was no loss of hair before treatment was instituted. Subjective symptoms were lacking.

The Wassermann reaction was negative on Feb. 16, 1924. Scales and cultures were negative. No guinea-pig inoculation was made. A biopsy performed in April, 1924, revealed no bacteria in sections. The epidermis was thinned and flattened. There was a well developed layer of fibrous tissue just beneath the rete mucosa; beyond this the fibrous tissue was more or less dense. There was a small, pale area just beneath one portion of the epidermis, circular in outline, made up of a loose stroma containing a few small capillaries, and a number of small, round cells, in more or less localized masses. Roughly surrounding these masses were concentric layers of fibroblasts, and a few rather large, deeply staining irregular cells, resembling endothelial leukocytes. Several giant cells were noted, some of the Langerhans type and others of the foreign body type. The lesion suggested tuberculosis.

The patient had received one-half skin unit of roentgen ray every two weeks.

DISCUSSION

DR. SUTTON: This case is undoubtedly an example of carcinoma, and suggestive of the so-called "morphea-like epithelioma." If we did not already have too many types, I would say it is a "carcinoma basocellulare superficiale cicatrisans." In looking over the sections, I found one that was typically carcinomatous, the growth extending downward from the basal layer. The slides were old, and the sections much faded, but I feel sure of the identification.

DR. SWEITZER: I looked at the slides but could not see what Dr. Sutton saw. I think it is a typical case of lupus erythematosus.

DR. COLE: I disagree with both the gentlemen who have just spoken. I think Dr. Stokes saw a case in my office several years ago with the process more exaggerated than this, showing the white scarring at the edges a little more marked than in this case, a typical serpiginous lupus vulgaris. I would not disagree with any one who wished to call it a Leloir type, but I think it is lupus vulgaris.

DR. WISE: There are several illustrations in the "Ikonographia" of dermatitis lichenoides chronica atrophicans on the chest and back. If we could visualize these same lesions appearing on the face, neck and scalp, more of us would consider this diagnosis. The lesions have a red rim, and there is

some resemblance to scarred wrinkling of the interior of the lesions. I think that the histologic study will not reveal anything of great value, but that the diagnosis of dermatitis lichenoides atrophicans should be seriously considered.

DR. HIGHMAN: According to the history, some giant cells were found in the biopsy. It is rather striking that the only positive observation, either clinical or histologic in the entire case history does not support the hypothesis advanced by Dr. Sutton. I do not know whether he is referring to the sclerodermatous type of epithelioma described by Pernet in the "Ikonographia" or not, but if so it does not resemble that at all. I am more inclined to agree with Dr. Cole, and to think it tuberculosis of the type he mentioned.

DR. PUSEY: I wish to support Dr. Sutton's view. There is a healthy scar all over the central area, with a thin, elevated border, slowly progressing. There is an active process in a narrow border at the periphery, leaving a healthy scar. This is not a form of any tuberculosis of the skin that I know. Also, of significance is the fact that there is a rolled edge which is minute but undoubtedly present. Under pressure the blood is driven out without any difficulty, leaving a little mass of waxy infiltration. I believe that it is a superficial epithelioma, and if I wanted to go further I should say it was probably basal cell.

DR. GRAY: Surely this case does not bear any clinical resemblance to the type Graham Little has described as erythematoid benign epithelioma. I feel that there would not be any basal cell epithelioma in the edge of these lesions. I know, in the cases described by Little, that one may take several sections before getting any epitheliomatous change at all, but when it is found it is absolutely typical.

VAGATONIA, PRURITUS. Presented by DR. KLAUDER.

An American woman, aged 37, had complained of generalized itching since September, 1925. She gave a history of hay-fever every year for seven consecutive years, until three years ago, and frequent attacks of sneezing, particularly in the morning. She had had some vasomotor disturbance of the hands, and constipation. She was of the visceroptotic type, and had a high palatal arch. Her blood pressure was 90 systolic 64 diastolic; pulse rate 65. She was below weight, and dermographism was present. The urine test gave a negative reaction. Differential blood count showed 4 per cent eosinophils.

The oral administration of atropine and epinephrine, which was begun in April, 1926, caused a complete cessation of the itching.

DISCUSSION

DR. SUTTON: I think this is a typical case of anaphylactic dermatitis. I do not know whether it is "vagatonia" or not, but I would like to know whether any cutaneous tests have been made.

DR. HIGHMAN: This is a noteworthy group of cases and they are dependent on a disturbance in the central nervous system. Dr. Clark, at a recent meeting of the New York Dermatological Society, mentioned some interesting observations he had made in cases of this type, either with or without cutaneous involvement. I do not care to go into details, but it resolves itself to the fact that a good many patients with essential pruritus had a markedly raised blood sugar coefficient, and improvement occurred both as to the disappearance of their sugar metabolism and as to the cutaneous manifestations under admin-

istration of insulin. He has done this work extensively, and has some interesting things to report. I think the case presented here might come in this group.

A Case for Diagnosis. Presented by Dr. Stokes and Dr. Weidman.

A girl, aged 11, was first seen, Feb. 16, 1925, with an eruption of three months' duration on the left leg. Trichophytes were demonstrated at that time. The disorder responded to treatment until March 13, when the patient developed an acute, generalized, bullous dermatitis. This also responded fairly well to treatment, but the child became nervous and was admitted to the hospital on April 16. At that time she presented a generalized papulosquamous dermatitis. She was treated with wet dressings, the ultraviolet lamp, etc. She improved and was discharged on June 15, when she disappeared from observation. On May 13, 1926, she was seen in the receiving ward, having had a complete nervous breakdown, with generalized scaling and a palm-sized vegetative kerionic lesion on the scalp. Microscopic examination of scrapings from the the scalp lesion showed trichophytes. The blood Wassermann reaction was negative. Roentgen-ray examination of the sinuses, teeth and pituitary gland gave negative results. The blood and differential counts were normal, as were the urinalysis and basal metabolism.

DISCUSSION

Dr. Williams: The child had kerion of the scalp, and Dr. Stokes informs me that mycotic organisms were recovered. She first had an infection of the feet, then of the scalp, and at the height of the kerion infection there was a profuse eruption all over the body. The scars are still visible. She was very ill and had enlarged glands in the axillae and groins, and these are still tender. She had the severe constitutional infection which usually accompanies kerion. There is a greater intensity of secondary eruptions near the focus of infection than anywhere else on the body. The generalized eruption was undoubtedly trichophytid; it resembles scarlet fever, measles, German measles, but is not identical with any of them in appearance or in course. The most curious feature is the occurrence of tinea of the feet before the outbreak on the scalp, and this raises the interesting question whether cases of tinea capitis which occur without any apparent source of infection may not be caused in this way; that is, infection of the feet from some unrecognized case of tinea of the feet, and then a spread of the infection to the scalp.

Dr. Stokes: We took pains to exclude drugs as a possible factor in the production of the eruption. The case is similar to the one shown in Chicago, about which we were mistaken several years ago. Dr. F. G. Harris set us all right later by demonstrating favus in the nails. The generalized eruption was a trichophytid.

Unilateral Syringomyelia. Presented by Dr. Stokes and Dr. Weidman.

A woman, aged 23, presented a disorder which began twelve years before, with fissuring of the tips of the thumb and index finger. The condition had gradually become worse. Physical examination showed loss of temperature sense in the left hand and wrist. There was no disturbance of pain sense or light touch. No other sensory disturbance could be made out. The blood Wassermann reaction was negative.

A Case for Diagnosis. Presented by Dr. Stokes and Dr. Weidman.

A girl, aged 16, had an ulceration of the forearm, of undetermined origin, of two years' duration, partially healing each summer. Smears and cultures were negative for fungi. Guinea-pig inoculation and the blood Wassermann reaction were negative. Sections from the first biopsy showed the epithelial hyperplasia compatible with squamous cell carcinoma. After conservative treatment subsequent biopsies exhibited only a moderate acanthosis, and heavy round cell infiltration of the corium.

DISCUSSION

Dr. Wile: The lesion has some resemblance to an unusual form of cutaneous tuberculosis. It apparently bore the earmarks of an infectious granuloma, but I think before one could exclude it, one would have to think of an extensive and chronic bromoderma. I have seen several cases of bromoderma with a solitary lesion, and although we usually think of this as disappearing without leaving much of a scar there are many that become so seriously inflamed that scarring and atrophy do occur after they have disappeared. I think the lesion in this case was present for two years or more, but I do not believe that would exclude a bromide lesion. I know of cases that have lasted for eighteen or twenty months, and see no reason why, under certain conditions, it might not last longer. I understand that the biopsies that have been taken did not demonstrate any tuberculous pathologic condition, but did suggest a marked infectious process which would seem to make it more likely that the condition might be bromoderma.

Dr. King-Smith: I would suggest artefact. I brought down a slide with me of a case that was thought to be carcinoma and turned out to be an artefact. We put the patient in the hospital for a month and the lesion completely healed.

Dr. Stokes: I think if Dr. King-Smith had seen the patient when she was first presented his opinion that the case was one of an artefact would have been strongly reinforced.

A Case for Diagnosis. Presented by Dr. Stokes and Dr. Weidman.

A woman, aged 29, had discharging sinuses from the right mediastinal and right infraclavicular regions, following operation in June, 1923, on a tumor of four months' duration. Four subsequent operations, deep roentgenotherapy and the Alpine lamp, both locally and systemically, had brought little improvement.

Biopsies from the skin and wall of the sinus after each operation showed only chronic inflammatory tissue; a right cervical lymph node was present, and acute hyperplastic adenitis. The blood Wassermann reaction and guinea-pig inoculation were negative. Roentgenograms of the chest, the last in April, 1926, showed involvement of the right upper lobe, with destruction of the inner end of the right clavicle. The blood count and differential estimation on three different occasions were normal. The urine reaction was negative.

DISCUSSION

Dr. Stokes: This case is perhaps not ideal to show a dermatologic group, for the most significant processes are internal, but it seems to fall in the group of granulomatous conditions of unexplained etiology which we are unable to differentiate at present. The woman has a tremendous involvement of the chest. Material has been obtained from almost every part of the lesion that

could be reached by either surface or surgical procedures, and nothing but granulomatous processes were found. The woman is gradually dying, and we are not able to find anything definite. I remember seeing a case presented in the Mayo Clinic in which the base of the brain was being perforated by a granuloma in the nose which we could not classify, and this case seems to belong in the same general group.

SYMPATHETICOTONIA, ECZEMA. Presented by DR. KLAUDER.

A boy, aged 19, born in the United States of Jewish parentage, experienced an attack of eczema for six months prior to April, 1925. The eruption was papular in type and lichenoid, involving the entire face, neck, upper part of the chest, flexor surfaces and bends of the elbows and the knees. The skin was dry and he perspired slightly. Blood pressure was 112 systolic and 60 diastolic. The pulse rate was 100. The right eye was dilated and the left eye normal in size. The oculomotor reflex was negative. He had a high palatal arch.

These observations suggested the use of pilocarpine. There was no reaction to $\frac{1}{10}$ grain (0.006 Gm.) of pilocarpine administered by hypodermic injection, following which this dose was given by mouth three times daily. On this treatment and local applications, the eczema rapidly improved and entirely disappeared. He was still taking pilocarpine. The nature of the local treatment was essentially the same as before the administration of the pilocarpine, when it was without effect.

NEVUS REMOVED BY FULGURATION. Presented by DR. KLAUDER.

A man, aged 36, when first seen in August, 1925, presented an extensive nevus consisting of an elevated fungoid mass which involved the greater part of the right face and forehead and extended into the scalp and on to the neck, involving the right eyelid and right ear, and extending behind the ear. The lesion presented a moist surface, with an ill-smelling discharge. The entire mass was removed by fulguration, the bipolar method being used, under gas anesthesia. The operation was divided into three stages, approximately one third of the entire mass being removed at each operation, the duration of which was about one hour. There was uneventful healing with keloid formation, which was subsequently removed by roentgenotherapy.

Photographs were shown of the lesion before operation and after healing, showing the keloid formation, and of the final result, which was a smooth, pliable scar at the site of the nevus.

DISCUSSION

DR. SUTTON: This case represented some of the best results I have seen.

A CASE FOR DIAGNOSIS. LICHEN PLANUS HYPERTROPHICUS (?). Presented by DR. KNOWLES and DR. LUDY.

A Cuban negro, aged 55, gave a history of a series of chancres, gonorrhea and variola in 1899, while in army service. He first noted a warty growth on the left leg in 1888. There was little itching at first but this afterward became more pronounced, and he noted that scratching caused the lesion to grow more rapidly. A similar warty growth started on the right leg in 1908. In September, 1925, the warty area in the middle third of the lower part of the left leg enlarged, and pus could be exuded on pressure. The condition had been present intermittently since that time.

The urine was normal. Examination of the blood disclosed red blood cells, 302,000; white blood cells, 9,200; hemoglobin content, 97 per cent; blood sugar, 1.18 per cent; blood urea, 9 per cent; blood uric acid, 3.6 per cent; blood Wassermann reaction ++++. The case was regarded as lichen planus hypertrophicus.

DISCUSSION

DR. COLE: If one were to separate any of those lesions from the area, all would agree that the condition looked much like prurigo nodularis.

DR. GRAY: These cases raise a question about the nomenclature of this type of case. I take it that Dr. Cole in speaking of "prurigo nodularis" means a more or less itching eruption on the legs and forearms, with symmetrical dome-shaped nodules, which I believe was originally described in this country. Pautrier has been investigating these cases recently and has come to the conclusion, probably rightly, that these are cases of lichenification and not true lichen planus. I think this present case is a true lichen planus. It is like several we have seen in London which have been labeled "lichen obtusus." It is distinct from "prurigo nodularis" to which the name "lichen obtusus corneus" has also been applied. This case resembles closely that of a patient I had whose lesions appeared in the same location in an interesting manner. The disorder started about twenty years before I saw the patient, with several of these domelike lesions on one leg. Ten years later, he developed them on the other leg. His physician had one of these lesions excised and ground up, and produced a vaccine. The result of the use of this vaccine was the development on the forearms of a group of lesions of a prurigo nodularis type. The patient had typical lesions of lichen planus in the mouth, and the sections from the other lesions showed what we all agreed was lichen planus. The point of interest is whether these cases are really lichen planus, or whether they are cases of lichenification, related to the prurigo nodularis group.

DR. SUTTON: Several years ago, I had an opportunity to study an almost identical case, in a druggist from Leavenworth. Clinically, as well as histologically, the disorder was typical of lichen planus hypertrophicus. Later, this same patient developed some netlike, warty lesions on the backs of his hands, and I thought that I had found something new. I dubbed it "lichen planus retiformis," and it was a year later when I found that Sir Norman Walker had included a description of it in every edition of his book.

DR. POLLITZER: In prurigo nodularis the lesions would not be so limited as they are in this case. Such a case would have lesions on the upper extremities as well as on the legs; but in my opinion the case corresponds to lichen hypertrophicans.

EPITHELIOMA. Presented by DR. PFAHLER and DR. KLAUDER.

A man, aged 57, was presented to show the cosmetic results of the treatment of an epithelioma by fulguration, after it had constantly recurred despite treatment with one application of caustic paste and much roentgenotherapy. The lesion had been present for eight years at the time of the fulguration. It had involved the lower eyelid and inner canthus and, extending midway between the eyelid and upper lip, had involved the side of the nose. A fine, pliable scar was present at the site of the epithelioma.

THERMALGIA. Presented by DR. KLAUDER.

A woman, aged 23, gave a history of a gradually increasing, painful reddening of the palms, of four years' duration. The condition was aggravated in hot, humid weather. During the last year there had been an aching pain in the center of the palms, and when the pain and reddening were most severe there was excessive sweating of the palms. Neither the pain nor the discoloration was lessened by holding the hands elevated. There was no history of injury to the arms prior to the onset. The patient has been a telegraph operator, and frequently experienced considerable fatigue of both arms and hands while working. She presented on both palms a central area of pallor, with a surrounding circle of livid bluish reddening of the skin, irregularly distributed, which produced a mottled appearance.

DISCUSSION

DR. SUTTON: I think this is a case of Wier Mitchell's erythromelalgia. Occasionally patients get relief by holding the arms in the air, or putting the hands in water. The first case I ever saw was that of a physician, and it was so severe that he almost committed suicide. Sometimes, if he even so much as touched the doorknob, he would have intense pain. I think the lesion is an angioneurosis, and probably belongs in the erythromelalgia group.

ACRODERMATITIS PERSTANS (HALLOPEAU). Presented by DR. KLAUDER.

An Austrian woman, aged 32, presented on the majority of the fingers of both hands sharply marginated, erythematous lesions, the periphery of which was scaly. The surface of the lesions was dry, and studded here and there with pustules. Most of the fingernails were involved, presenting essentially a pulverized appearance. The condition was of eight years' duration, having been present in varying severity, never entirely disappearing. There were no other cutaneous lesions. The general physical examination gave essentially negative results, except for infected tonsils which had recently been removed. A roentgenogram of the fingertips was negative. Many examinations of the scales for fungi, and cultures of the scales, had been negative. A number of smears made from the pus showed many leukocytes, but no organisms. Many cultures of the pus yielded no growth, but the last culture showed pure *Staphylococcus aureus*. The lesions had been resistant to treatment.

ARSENICAL PIGMENTATION. Presented by DR. STRAUSS for DR. KNOWLES.

A man, aged 26, had had psoriasis since 1919. He gave a history of severe attacks of influenza and typhoid, and gonorrhea several years ago. The present illness began in October, 1925, when he had malaise for two weeks. On November 4, he developed an eruption which his physician described as resembling measles. The eruption persisted as red, scaly papules on the face, arms and neck, accompanied by intense itching. He was given a great deal of medicine by his family physician over a period of five months, and one month ago there remained only pigmented spots and the psoriatic eruption in the usual region. Most of the pigmented spots were slightly sunken and scarlike, but on the palms and soles were suggestions of arsenical keratoses.

GRANULOMA INGUINALE WITH LESIONS OF THE FACE AND INTRA-ORAL LESIONS. Presented by DR. KNOWLES and DR. LUDY.

A man, aged 36, presented a genital lesion of seven years' duration. A similar lesion appeared on the face one year ago, and intra-oral lesions seven months ago. Donovan bodies had been found in all lesions.

He had received many injections of antimony potassium tartrate intravenously, every other day, with practically no improvement. He was then placed on bismuth medication, 1 cc. intravenously twice a week, for six or eight weeks, and received small daily doses of the roentgen ray for fifteen days, after which he had one treatment a week. There was marked improvement after the use of the roentgen ray plus treatment with a bismuth preparation.

DISCUSSION

DR. LUDY (by invitation): This patient was presented because of the lesions in the mouth and cheek as well as the inguinal region. Donovan bodies were found in all three places. The man had been given a bismuth preparation and, prior to that, antimony potassium tartrate, without any improvement. Roentgenotherapy plus treatment with a bismuth preparation seems to bring about more improvement than anything else.

DR. KNOWLES: This case was presented through the courtesy of Dr. Thomas Stelwagon, professor of genito-urinary diseases. His experience has been that bismuth has worked better than antimony potassium tartrate in these cases.

SCLERODERMA WITH DIABETES MELLITUS CONTROLLED BY INSULIN. Presented by DR. KNOWLES and DR. LUDY.

A Russian Jew, aged 53, was first seen in May, 1924, with a bilateral eruption of the supraclavicular regions, groins and forearms, which was associated with a feeling of tenseness and slight tingling. He stated that six months before he had noted that the skin in the right groin was becoming hard, with some tingling. About two months later a similar condition was noticed over both clavicles. The urine was examined and sugar was found. He was referred to the diabetic clinic, where he was treated by diet plus insulin. The skin condition improved, and on September 4 he left the clinic. At that time the areas in the groins were disappearing and the other areas showed marked atrophy. He was seen again on October 2, when both forearms anteriorly showed linear streaks of scleroderma. There were similar areas developing about the umbilicus, and the former areas showed marked enlargement. On October 13, after again being treated, the condition showed marked improvement.

On May 15, 1924, the laboratory observations were: blood sugar 0.26 per cent; urine sugar +++. May 29: blood sugar 0.17 per cent; urine sugar 0. June 19: blood sugar 0.15 per cent; urine sugar 0. September 4: blood sugar 0.09 per cent; urine sugar 0. The patient was markedly improved. October 2: blood sugar 0.21 per cent; urine sugar +; the skin condition was aggravated and new areas of scleroderma were present. December, 1924: blood sugar 0.1 per cent; no new areas were present and the former areas were undergoing atrophy and resolution. May, 1926: the patient had been under observation since December, 1924, during which period the blood sugar had continued normal, and no other areas of scleroderma had developed.

DISCUSSION

DR. LUDY: The interesting feature of this case was that the patient had diabetes mellitus. When he took insulin and attended to his diet the lesions cleared up. As soon as he ceased this treatment, morphea would recur. He has been kept under observation for three years and during that time the process has persisted. Whenever the blood sugar is back to normal the lesions disappear or undergo atrophy.

DR. KNOWLES: This case should be emphasized, for we know so little of the etiology of scleroderma in the localized form. It is interesting, for the patches reappear when the patient drops the insulin treatment of his diabetes. This brings out an interesting form of treatment in cases of scleroderma of this type.

MULTIPLE HEMORRHAGIC SARCOMA (KAPOSI). Presented by DR. KNOWLES for DR. CORSON.

A Russian, aged 66, presented an eruption of the left lower thigh and leg, accompanied by some itching. The Wassermann reaction was negative. A biopsy performed in July, 1924, showed the corium excessively cellular, containing small thick-walled capillaries and numerous blood spaces. The cells were of two distinct types, the most prominent being a spindle-shaped cell, with a dark staining, blunt-ended nucleus. The cells were arranged in interlacing strands and coursed irregularly. The other type was a small, round, wandering cell, evidently inflammatory in character.

The patient has received deep roentgenotherapy, with marked improvement in the lesions. The last treatment produced considerable erythema. An interesting point was that the disease was unilateral.

ITCHING ERUPTION (URTICARIA PIGMENTOSA ?). Presented by DR. STRAUSS for DR. KNOWLES.

A man, aged 40, had an itching eruption of two years' duration, which was thought by him to be due to sunburn. He had had a number of attacks of hives, and each one increased the quantity of permanent spots left on the skin. Some of the spots could be faded by pressure, but they were chiefly fixed pigment deposits. On the front of the chest were a number of small, but otherwise typical, hives. The eruption involved all the parts covered with clothing, and the backs of the hands.

URTICARIA PIGMENTOSA. Presented by DR. STOKES and DR. WEIDMAN.

A woman, aged 36, had had the disorder for six years. The lesions were confined to the face, shoulders, arms and forearms. Biopsy revealed the characteristic pathologic picture, with mast cells. The Wassermann reaction was negative. The blood sugar content was 0.11 mg. per hundred cubic centimeters; the urea 3.4 mg. per hundred cubic centimeters; the urea nitrogen 9 mg. per hundred cubic centimeters. Protein sensitization tests were negative throughout. All forms of therapy had been unsuccessful.

DISCUSSION

DR. SUTTON: In 1912, I published a report of a group of cases of this type. I think Dr. W. W. Duke of Kansas City has done more work on anaphylaxis than any one else with whom I am acquainted. This man said he had more

itching after bathing than at any other time. Duke has divided these cases into sensitization due to various forms of physical energy. I have seen one or two patients in whom heating just one extremity would give a terrific reaction, and this looks to me to be such a case. If so I would not be surprised if the lesions were free from mast cells. I would separate true urticaria pigmentosa, in which we get mast cells, from the ones in which we get the secondary pigmentation and which are characterized by repeated attacks of hives. I would like to have this patient examined for mast cells and for reactions to the various physical agents.

HYDROA ESTIVALE. Presented by DR. BROWN for DR. KNOWLES.

A child, aged 12, for the last four summers had developed discrete vesicles on the face, hands and ears, whenever exposed to sunlight. Scars of varicella-like type of previous eruptions were visible on these parts.

HYDRO-VACCINIFORME. Presented by DR. KLAUDER.

A boy, aged 9, had had this disorder for five years. It was said to be worse in summer. One brother and two sisters were well, and the physical examination gave essentially negative results. Hematoporphyrin was present in some specimens of urine, but not in all examined.

TUBERCULOSIS CUTIS. Presented by DR. DECKER for DR. KNOWLES.

An Italian street cleaner, aged 65, was admitted to the Pennsylvania Hospital during October, 1922, with a shallow indurated ulcer between the thumb and index finger of the left hand. No diagnosis was made at that time and the lesion healed in about one year. During November, 1924, he returned with numerous papules on the anterior surface of the left elbow. A biopsy showed the lesions to be tuberculous. The lesion on the hand remained healed. After about six weeks the patient disappeared, but he was seen again in May, 1926. The hand remained healed, the lesions at the elbow were the same as in 1924, and several new papules had appeared on the wrist.

DISCUSSION

DR. DECKER (by invitation): This patient was first seen about four years ago, when he had an indolent ulcer on the web between the thumb and index finger of the left hand. He disappeared and returned a year later with the ulcer cleared up and papules on the elbow. He disappeared again, and when he returned there were papules around the wrist. Biopsy showed a typical tuberculous lesion.

A CASE FOR DIAGNOSIS. Presented by DR. MUNSON for DR. KNOWLES.

An Italian, aged 44, had an eruption of twenty-three years' duration, which began in an insidious manner on the tibial aspects of the lower extremities. He said it "looked like sand," and was associated with marked itching. The eruption gradually spread, and in 1917 the entire cutaneous surface, including the face, became involved, and the itching became more pronounced. Redness and scaling were marked, although the eruption was not entirely confluent but existed as separate rounded spots in many regions. Induration was comparatively slight.

DISCUSSION

DR. HIGHMAN: This is a valuable case to see because it is so vague. It would be of value if Dr. Munson would give us his idea of the case.

DR. WILE: I would suggest that the case might be regarded as a very mild pityriasis rubra pilaris. There was some evidence of follicular hyperkeratosis on the fingers. There was a more or less atrophic appearance on the extremities, such as one gets in long standing, mild cases of this disease; and I think this as close a diagnosis as might be made.

DR. HIGHMAN: I see what Dr. Wile refers to, and what occurred to him occurred to me, but the manifestations were so mild that I dismissed the hypothesis. I thought possibly the main fact that we might depend on in the history was inaccurately given, and that the man had had the manifestations largely since infancy — that it was a chronic induration of the skin depending more on an ichthyotic basis. I was eager to hear more about the case for that reason.

MYCOSIS FUNGOIDES. Presented by DR. DECKER for DR. CORSON.

A woman, aged 77, stated that during 1918, she had an attack of dermatitis on her right thigh, which responded to local treatment. In 1922 the dermatitis recurred in the same region, did not respond to local treatment and gradually became indurated. The eruption was accompanied by marked itching. During May, 1924, she noticed a swelling in the upper third of the right thigh, which gradually increased in size until Aug. 6, 1924, when she was admitted to the service of Dr. DaCosta. The tumor was semiglobular, about 15 cm. in diameter, painless, soft, purplish-red and slightly ulcerated on its topmost portion. The surrounding skin was erythematous, with areas of induration arranged somewhat concentrically around the tumor. The regional lymph nodes were enlarged. Various laboratory examinations gave negative results. A skiagraph on August 7, showed no evidence of injury or disease in the upper third of the femur and hip joint. Further roentgen-ray examination on August 17 showed considerable enlargement of the mediastinal glands in the left hilus zone. The roentgenologist thought he saw the outline of a mediastinal mass. Also, there were three scattered masses in the left hilus field. Another mass attached to one of the lower right ribs, in the outer lung field, was thought to be metastatic. The lungs showed marked fibrosis and calcified deposits in the apexes. A portion of the tumor was removed for histologic study, and the pathologist reported it to be a mixed-cell sarcoma.

On August 23, radium was applied by Dr. Newcomet (100 mg. through 1 cm. of wood and 1 mm. of lead), application being made for two hours at 5 cm. spacings on each of twelve areas. Within twelve hours the lesion began to involute, and at the end of seven days it had entirely disappeared. The surrounding skin became normal at the same time, with the exception of some pigmentation, and the patient was discharged on September 4. She remained well until July, 1925, when the skin condition recurred. When presented there were present on the right thigh several red, gyrate, indurated plaques, which had slowly increased in size and hardness since her readmission. Arsenic, together with local applications, had apparently controlled the condition to a certain extent. Photographs were presented showing the lesion on admission in August, 1924, after treatment in September, 1924, and on readmission in July, 1925.

DISCUSSION

DR. DECKER: When we first saw this patient she had a large tumor on the thigh and after radiotherapy the tumor could be seen to melt away within a couple of weeks.

ERYTHEMA MULTIFORME PERSTANS. Presented by DR. DECKER (by invitation).

A girl, aged 19, had a disorder of three years' duration, which began in 1923, as a generalized erythema. The onset was acute, the eruption being accompanied by severe itching and lasting for several days. It gradually subsided, leaving residual transient erythematous plaques. During the three years, she had not been entirely free from the eruption, which had been most marked on the extremities. Her father died of carcinoma at the age of 38. Her mother, four brothers and two sisters were living and well. She gave a history of being in good health until she was 10 years old, when she developed acute rheumatic fever, complicated by endocarditis. She was bedfast for two years, but had had no other acute illnesses.

DISCUSSION

DR. WILLIAMS: In this case of "erythema multiforme perstans" I obtained a history of taking some form of phenolphthalein over a considerable period of time. I offer this as a possible diagnosis.

DR. DECKER: I went carefully into the history of phenolphthalein when I first examined this patient, and she did not tell me that at all. She had rheumatic fever and was in bed for two years. She has a definite myocarditis. I do not think it is a fixed eruption.

A CASE FOR DIAGNOSIS. Presented by DR. KNOWLES and DR. CORSON.

A boy, born June 9, 1924, was first seen at the clinic of Dr. Knowles on Feb. 19, 1925. He was the second child, a sister, now aged 8, being free from any skin affection. The parents were young and apparently healthful. There was no history of syphilis or tuberculosis in the family. The birth was normal, and the child was breast fed until 8 months of age. He was well nourished and the teeth erupted at the usual time. There had been no contagious disease.

At about the fourth month a small, yellowish-brown papule appeared almost in the median line of the forehead, just below the hair margin, and gradually increased in size. Some weeks later two small tumors, identical in character, appeared on either temple and, though never reaching the size of the primary lesion, had exceeded the size of those subsequently erupting. When he was 7 months of age an eruption began on the cheeks which consisted of many small spots of the same type as the others, and which increased in size. They were not tender nor itchy. Treatment had been confined to mild applications.

Physical examination on admission showed the infant, aged 8 months, to be well nourished, with every outward indication of good health, except for the eruption on the face. To the left of the median line, near the hair line of the forehead, was a small, semiglobular, sessile tumor, practically circular and measuring 3/16 inch (0.5 cm.) in diameter. Smaller tumors, similar in character to that on the forehead were located 3/4 inch (1.9 cm.) from each external canthus. The three were of a color nearly approaching pale orange, but having a certain translucent quality such as that often noted in molluscum contagiosum. On the summits they were more yellowish, and at the base of the

tumor the skin assumed a reddish-brown tinge. The surface was smooth and slightly glistening, and the whole growth, in each instance, was firm to the touch. The primary lesion appeared indefinitely umbilicated, and at a casual glance might have been mistaken for molluscum except for the unusual color. The elevation was marked, being nearly half the diameter. Over the cheeks, most prominently on the portion directly below the lower lids, but extending also in a scattered fashion over the nose and toward the ears, were about 200 slightly elevated, discrete yellowish-brown papules, varying in size from that of a pinhead to twice that proportion. Those on the nose were smaller, flatter and browner than those on the cheeks. A certain number, interspersed, seemed to be lentiginous and without elevation. Puncture and squeezing of the larger lesions brought forth nothing but blood.

Oct. 10, 1925. The child had a bad summer, with gastro-intestinal disturbance seriously affecting his health. He lost considerable weight and his color was poor. Diarrhea was still present, and he was peevish and fretful. Freckle-like spots had replaced the tumors to a certain extent, and the tumors had flattened down markedly. The freckles were present not only on the face but also on the back of the head and shoulders, and could be made out faintly on the arms. They were small, fairly uniform in size, and principally light tan. Biopsy sections revealed a structure suggestive of tuberculosis cutis.

PAPULAR ITCHING ERUPTION OF AXILLAE (FOX-FORDYCE). Presented by DR. BROWN for DR. KNOWLES.

A girl, aged 18, stated that itching began in the axillae several months ago, and that a few months ago a few papules appeared which later became more numerous. The previous medical history was negative.

KERATOSIS PALMARIS ET PLANTARIS. Presented by DR. LUDY for DR. DAVIS.

The patient was an Italian girl, aged 8. The palms and soles, as well as the flexor surfaces of the fingers and toes, looked as if they were encased by a yellow-waxy appearing dry and hard plate ⅛ inch (0.3 cm.) thick. The thickened area was surrounded by a pinkish halo which merged abruptly into healthy skin. The hands were stiff and the fingers partly closed, and movement was limited. Large fissures were present while the finer furrows were erased. Tactile sense appeared to be absent. The heels showed greater thickening; the color was a dirty brown and the thickness approached ¼ inch (0.6 cm.). The hollow of the foot showed the least thickening, although islands of greater thickening were present.

The condition had been present since birth and was first noticed by the family at the age of 2 months. Neither the father nor mother, nor any one in the family, showed a similar condition. The remaining children were normal.

Roentgenographic examination showed the sella turcica much enlarged, and the possibility of a cyst of the pituitary gland had been considered. Thirteen ribs were present on the left side. The mentality of this 8 year old child was that of a normal 4 year old child.

ACANTHOSIS NIGRICANS. Presented by DR. SIDLICK for DR. KNOWLES.

A man, aged 58, presented a generalized disorder of four years' duration. The condition was said to have begun insiduously. The patient first noticed that the skin over the fingers and thumbs began to crack. Being a taxi driver he attributed the condition to his occupation and the cold weather. Later he

was annoyed by itching on various parts of the body, and the appearance of pigmentation about the neck and the flexures of the larger joints. Physical examination gave negative results except for the skin. The entire cutaneous surface was pigmented, varying from light gray to black. The skin was indurated, and warty thickenings were present over the general cutaneous surface, the growth being more exuberant in the axillae and the flexures of the joints. The mucous membrane of the mouth and anus was darker than normal, and presented scattered warty growths. Roentgenograms of the chest and gastro-intestinal tract were negative for malignancy. Histologic studies of the skin for arsenic were negative. All blood chemistry tests gave negative reactions.

ACANTHOSIS NIGRICANS. Presented by DR. LUDY.

A girl, aged 11, had a disorder of six years' duration, which was first noticed as a dark brown discoloration of the forehead, back of the neck and mouth region. The pigmentation and thickening slowly progressed until the entire body became more or less involved. There was nothing significant in the medical or family history. There was no history of a similar condition in the family. Physical examination gave negative results except for a slight, palpable mass in the splenic region. The skin at the back of the neck and in the axillae was most involved, the thickening in these areas being so marked that the skin was thrown up in villi, giving it a harsh appearance, but it was soft to the touch.

Section of the stroma revealed a few normal appearing sweat glands, and numerous finger-like extensions passing upward and outward, covered with a comparatively normal appearing epiderm. The uppermost parts of the connective tissue stroma were delicately fibrillar, and a moderate number of capillaries passed perpendicularly toward the surface, frequently sending out lateral branchings, which in turn were supplied by capillaries. The presence of these extensions in the corium was responsible for the fine mossy appearance of the skin seen clinically. The irregular appearance of the epiderm was due to the course it took to clothe the connective tissue extensions of the corium. The various layers were clearly defined; the stratum corneum consisted of a thin layer of keratinous material, and the stratum granulosum appeared normal. At the summits of the cutaneous villi, the prickle-cell layers and the rete appeared normal. In the deeper recesses, between the villi, the prickle-cell layer was thickened to ten or twelve layers. It seemed, however, that the epidermal thickening was not extreme in any place, for the larger appearing masses of epithelial cells could be caused by variations in the obliquity of the plane of section. The amount of pigment in the rete varied, some cells being loaded while in others it was scant. No mitotic figures were found. It was difficult to determine whether the corium or epiderm were primarily concerned and responsible for the villose character of the skin, but the evidence seemed to be in favor of the epiderm. It seemed that the epidermal cells became hyperplastic to such an extent that they required more room for expansion, and as they pressed laterally the skin surface was thrown up into folds and subfolds, with an accompanying expansion of the subpapillary fibrous tissue.

A roentgenogram of the gastro-intestinal tract was negative, except for ptosis of the transverse colon.

The laboratory observations included: blood sugar 0.1 per cent and urea 14 mg. per eleven cubic centimeters of blood. The urine was negative for melanogen. The blood count was: red cells 4,340,000; white cells 11,400;

hemoglobin content 90 per cent. The differential count was: polymorphonuclears 59 per cent, small lymphocytes 28 per cent, large lymphocytes 8 per cent, transitionals 3 per cent. The stool tests gave negative reactions except for a trace of occult blood (4 to 5 per field). The basal metabolism was 15 per cent subnormal. The blood Wassermann reaction was negative.

DISCUSSION IN CASES OF ACANTHOSIS NIGRICANS

DR. POLLITZER: These cases hardly require discussion, as they are both perfectly typical. What we need for clearing up the pathologic condition of this disease is a number of good necropsies. In regard to the juvenile cases, these usually go on indefinitely and the patient dies of old age or some intercurrent affection, but I wish to point out the fact that not every case of acanthosis nigricans in a young person is of the nonmalignant type. Malignant cases may develop in the young as well as in the adult.

DR. LUDY: In the case of the child, the roentgenogram revealed the transverse colon considerably ptosed, and there was some occult blood. The child has always enjoyed good health, and we were not able to account for the presence of the occult blood in any way.

COMEDO FORMATION ASSOCIATED WITH GENERAL ENDOCRINOPATHY. Presented by DR. WEIDMAN.

A white boy, aged 15, had been exhibited before the Philadelphia Dermatological Society and also at the Atlantic Dermatological Conference, and the case is reported in full in the ARCHIVES (**10**:225 [Aug.] 1924 and **11**:552 [April] 1925). He had gynecomastia, microrchidia, and a low basal metabolism rate. He was also far below the normal mental age, and the line of pubic hair and the figure were female in type. At that time the roentgenographic examination did not disclose any enlargement of the pituitary fossa, but since that time he had had violent outbreaks of vomiting, suggesting the effects of brain tumor. Roentgenograms at this time showed enlargement of the sella turcica, which exemplified the extent of the endocrinopathy. The patient was reexhibited because of the comedo formation of such an extreme grade, associated with an endocrinopathy that apparently affected all of the members of the endocrine system. The question again arose whether the sebaceous system was not also participating in the endocrine rapprochement.

MULTIPLE BENIGN CYSTIC EPITHELIOMAS. Presented by DR. LUDY for DR. DAVIS.

A negress, aged 25, visited the outpatient skin clinic of the Pennsylvania Hospital in 1920, showing numerous rounded glistening nodules varying in size from that of a pinhead to that of a pea, located on the anterior surface of the thorax. The nodules were discrete, firmly embedded in the skin, round, solid and painless. The patient visited the clinic infrequently, but was studied again in 1925, when the lesions were more numerous and the neck and lower portion of face showed like involvement. Many of the lesions at that time were umbilicated. There was no evidence that any one else in the family had ever had a similar condition.

Microscopic examination showed that the tumor consisted of circumscribed epithelial downgrowths limited by a fibrous capsule. The downgrowths constituted finger-like projections into the corium and these were occasionally dilated, forming cysts which harbored a colloid material.

DISCUSSION

DR. SUTTON: Some years ago, I made a differential study of multiple benign cystic epithelioma and syringocystadenoma, and examined several thousand sections from eight different cases, five of the former, and three of the latter. I believe this is an example of syringocystadenoma, and so far as I know, it is unique. I should like to hear Dr. Hazen's opinion regarding the case. He probably sees a larger number of rare dermatoses in the colored race than any one else here.

DR. HAZEN: I have not seen any of these cases in my service in Washington, but I have seen some in New York at some of the meetings there.

DR. LUDY: The patient came into the dispensary with an eruption of six or seven years' duration, which was diagnosed as multiple benign cystic epithelioma.

DERMATITIS HERPETIFORMIS. Presented by DR. LUDY for DR. DAVIS.

An Italian boy, aged 11, was vaccinated at the age of 5. The vaccination in itself was skillfully done and there were no sequelae. According to the mother, two months after the vaccination a generalized eruption occurred which did not yield to the customary household remedies, and the child was taken to a skin dispensary. The mother stated that the child had been under treatment in nearly all the better hospitals, and indeed all the "wise men of the East" had treated the patient, without avail.

The eruption consisted of vesicles varying in size from that of a pinhead to that of a lentil; they were arranged in groups (herpetiform). The eruption was generalized, but the mucous membrane always remained free. Itching was slight, as evidenced by the personal history as well as the lack of scratch marks. He had never been free from the eruption for a longer period than three months. The eosinophils varied, ranging from 12 to 34 per cent. Food sensitization tests had given negative results. The patient was of normal mentality. All medication had given only temporary relief.

IODIDE ERUPTION, VINCENT'S ANGINA. Presented by DR. KNOWLES and DR. LUDY.

A woman, aged 23, had ulcerations on the arms and legs of about four months' duration. She gave a history of having taken "blood medicine" because of a venereal sore which was present on the labia majora seven months before. The blood Wassermann reaction was $++++$, and a smear from the mouth was positive for Vincent's angina. No antisyphilitic treatment nor iodides had been given, and the patient was improving.

DISCUSSION

DR. LUDY: This patient, before admission to the hospital, was taking some "blood medicine" and developed an eruption on the hands and legs. We stopped the medication and the patient improved immediately. We came to the conclusion that it was an iodide eruption. She had a $4+$ Wassermann reaction, but has never been treated for syphilis since she has been in our care.

DR. KNOWLES: This patient was presented by Dr. Schamberg at the meeting of the Philadelphia Dermatological Society about a month ago, with an ulcerative lesion. We decided that it was an iodide eruption, as Dr. Ludy has just stated. Since the iodides have been stopped and she has had no medication the lesions have practically healed.

PELLAGRA. Presented by DR. KNOWLES and DR. LUDY.

A man, aged 48, was first seen during the early part of March, 1926, at the skin clinic of the Pennsylvania Hospital. At that time he had a bilateral dermatitis on the dorsum of the hands, which was sharply marginated and terminated abruptly at the wrist (gauntlet fashion). The face and neck showed a similar dermatitis and the condition greatly resembled sunburn. The edge of the tongue was red and minus its epithelium. There was no diarrhea and no mental symptoms were present. The patient stated that he had had some of the usual diseases of childhood but did not remember which ones. He recalled having had similar attacks of "sunburn" about the same time of year for several years, and stated that he would not have bothered about it this year if his hands had not felt numb. He confessed to being a free user of alcohol, and stated that for the last eight months he had been under its influence constantly. Shortly before presentation he had developed a severe diarrhea and entered the hospital. He had lost about 30 pounds (13.6 Kg.) and was decidedly asthenic. His tongue was dry and swollen, and the pharyngeal and buccal mucosa harbored many superficial sloughs. The dorsum of the hands showed exfoliation and dark red pigmentation. The face showed a branny exfoliation but less pigmentation. He was extremely restless and complained of insomnia.

NOTE: This patient was discharged at his own request on June 22, 1926. The diarrhea had ceased, and with the exception of pigmentation of the hands he appeared normal.

XANTHOMA WITH ERYTHEMA TELANGIECTODES AND PARAPSORIASIS. Presented by DR. GREENBAUM (by invitation).

This patient was presented before the Section on Dermatology and Syphilology of the American Medical Association, at the meeting in Atlantic City in May, 1925, in connection with a paper on this subject. The paper, with case history, was published in full in the ARCHIVES (**13**:78-89 [Jan.] 1926).

There had been little change since the former report, except that the more prominent lesions on the face had been destroyed with the actual cautery. No hypercholesterinemia was present during the entire time of observation, eighteen months, despite the fact that the patient was given 15 grains (0.97 Gm.) of pure cholesterol three times daily, to a total dosage of 2⅘ ounces (79.38 Gm.). There was no visible enhancement of the existing lesions as a result of this experimental procedure. When presented he was receiving a mixture of iodine, phosphorus and bromide.

ERYTHEMA ELEVATUM DIUTINUM (A CASE PRESENTED FOR DIAGNOSIS). Presented by DR. WEIDMAN.

A white man, aged 35, had been exhibited before the Philadelphia Dermatological Society, as having a case for diagnosis, by Dr. Edward F. Corson, and the case is reported in the ARCHIVES (**10**:231 [Aug.] 1924). It appeared to be the consensus of opinion that whereas the disorder simulated xanthema tuberosum multiplex, the final diagnosis had to be reserved. The same result was obtained when the patient was reexhibited at the Atlantic Dermatological Conference (ARCH. DERMAT. & SYPH. **11**:566 [April] 1925). At the first presentation there were large, flat nodules over the knees, elbows, knuckles, wrists and external malleoli; i. e., points of pressure. They were dusky red with a faint yellowish cast in the centers of the more recent ones, and they were so sharply circumscribed and so deep seated in the skin that the lesions could be lifted up like a

button from the underlying parts. There were no subjective symptoms except "chronic rheumatism." In spite of persistently negative Wassermann reactions the patient had received considerable antisyphilitic treatment, including the arsenicals. Five months after the first presentation he was admitted to the University Hospital, more because of the rheumatism than because of the skin lesions. At that time the nodules over the knees and elbows had enlarged into plaques, but otherwise were the same as before. The old lesions were brown, with no trace of yellow. During nine days in the hospital the temperature was normal except for three minor exacerbations (99, 91.1, 99.2 F.). The blood nitrogen measured 21, the uric acid 3.7 and the sugar 0.072 per cent. The blood cholesterol at this time was 220 mg., but on three other occasions it was within normal limits. Since then (more than two years), the lesions had incompletely regressed, but the patient stated that in the intervals between visits they often temporarily enlarged. Histologic sections from one of the more recent lesions in the forearm did not disclose any xanthoma cells. The picture was that of a severe toxic necrosis, which affected particularly the tissue immediately adjacent to the capillaries of the subpapillary parts and gave them the effect of thick-walled arterioles with necrotic walls. Polymorphonuclears were closely crowded in this position, and sparingly scattered elsewhere in the upper part of the corium. The necrosis was also seen independently in the subpapillary regions in the form of minute foci which reminded one of Aschoff's nodules, and at once brought the rheumatic history into prominence.

Dr. Weidman regarded the dermatosis as the cutaneous expression of the patient's rheumatism, just as xanthoma tuberosum has at times a rheumatic substitute.

DISCUSSION

DR. GREENBAUM: My patient never had a hypercholesterinemia, nor did he develop any hypercholesterinemia after the large amount of pure cholesterol by mouth. The parapsoriasis practically all disappeared during the administration of the cholesterol.

DR. WILE: The lesions in Dr. Weidman's case corresponded fairly well with the clinical picture of erythema elevatum diutinum.

DR. GRAY: I have seen one or two not very dissimilar cases, and am inclined to class this one with Crocker's erythema elevatum diutinum. It is a group which fits in between the erythema multiforme, on one hand, and granuloma annulare, on the other, and the case belongs to this group, although it is more like granuloma annulare than erythema multiforme. I think perhaps it would be better to call such a case erythema multiforme of persistent type rather than erythema elevatum, which was reported by Crocker as occurring only in women.

DR. PUSEY: Does Dr. Gray make any definite distinction between granuloma annulare and erythema elevatum?

DR. GRAY: I consider them both types of the same disease. In the erythema elevatum the outline is not quite so round, but they are both manifestations of the same disease.

DR. WEIDMAN: As to the histology of my case, the corium contained numerous, rather closely placed, focal necroses very like what we see in Aschoff's nodules in the heart, suggesting that a streptococcus infection was at the bottom of it. Besides, my patient gave a history of having had numerous attacks of rheumatism, and it may be that this erythema is streptococcic in origin. This condition approximates granuloma annulare histologically; however, there are none of the endothelioid cells which we see in granuloma annulare.

DETROIT DERMATOLOGICAL SOCIETY

Regular Meeting, June 22, 1926

HOWARD J. PARKHURST, M.D., *Presiding*

ERYTHEMA INDURATUM. Presented by DR. PARKHURST.

Mrs. G. B., aged 28, a housewife, had had the condition for nine years, the legs being affected, especially on their posterior aspects. There were several medium coin sized erythematous and indurated patches, and many large coin to palm sized scars at the sites of healed ulcers. There was a large coin sized, ragged ulcer on the middle third of the calf of each leg. At various times, different local applications, roentgen rays, ultraviolet rays, rest in bed, and cod liver oil internally had been used with more or less apparent benefit, but there were always occasional exacerbations, during which new, tender nodules appeared.

DISCUSSION

DR. WILE: Considering this as an embolic tuberculous process, I would recommend a search for a focus of tuberculosis. In a case which I saw recently, the lesions disappeared after the removal of a calcified cervical lymph node.

DR. STEVENS: It would be advisable to expose the entire body to the ultraviolet rays.

LICHEN PLANUS LIMITED TO THE BUCCAL MUCOSA. Presented by DR. PARKHURST.

F. P., a clerk, born in Greece, aged 35, had first noticed a peculiar roughness in the cheeks eighteen months previously. The characteristic whitish network and small circles were present. There were no cutaneous lesions. A combination of arsenic and mercury had been administered, with no benefit.

CUTIS VERTICIS GYRATA (?). Presented by DR. PARKHURST.

Mr. L. F., a clerk, aged 27, presented a small palm sized, elevated patch, of spongy consistency, at the vertex of the scalp. There were three deep longitudinal furrows in this patch. The color was that of the normal scalp. The condition was said to have been present since birth. The hair growth was normal.

DISCUSSION

DR. WILE: This condition resembles cutis verticis gyrata, but the patch is at the top of the head, is soft, and has been present since birth. It is more probably a lymphangioma.

PRURIGO NODULARIS. Presented by DR. PARKHURST.

C. L., aged 27, an automobile mechanic, had had the affection for seventeen years. On the upper part of the trunk, shoulders, arms, buttocks, thighs and legs were a number of large pea to small coin sized, infiltrated nodules, mostly crusted, and varying from pink to brown. There were frequently recurring paroxysms of pruritus. Considerable relief had followed roentgen-ray therapy.

DISCUSSION

DR. WILE: I agree with the diagnosis of prurigo nodularis. These cases belong in the chronic urticaria group.

FAMILY WITH CONGENITAL DYSTROPHY OF THE NAILS. Presented by DR. PARKHURST.

In the father and two sons, the nails were dry, slightly thickened, and curved downward laterally toward the free border. The father's mother and two of his brothers were said to have the same condition. A third son, whose age was between that of the two presented, was not affected.

DISCUSSION

DR. WILE: Although the stock in this case has been diluted through two generations by marriage, the dominant dystrophy has persisted. The study of this subject is interesting.

PRURITIC NEVUS UNIUS LATERIS. Presented by DR. PARKHURST.

F. N., a girl, aged 9 years, had always had a brown verrucous line, about a quarter of an inch (0.6 cm.) wide, extending down the right thigh and leg, posteriorly, and less distinctly, over the heel and along the sole to the second toe. This line had been the site of constant pruritus, and the patient had been treated several times for secondary impetigo as a result of scratching. Linear excision had been advised.

DISCUSSION

DR. WILE: I saw the patient as a baby, and there was apparently no pruritus then. The itching is probably due to the involvement of a branch of the saphenous nerve. I should recommend excision, having seen it done with good results.

SUMMER PRURIGO OF HUTCHINSON IN TWINS. Presented by DR. PARKHURST.

Mrs. M. H., and Mrs. H. H., twin sisters, aged 28, presented, on the nose, chin, cheeks and upper mid-chest, and on the dorsa of the wrists, irregular patches of single and confluent, small, erythematous papules and vesicles, itching at times. The condition was practically absent in the winter, and flared up, with pruritus, in the warmer months, after exposure to direct sunlight. The Kromayer lamp, applied under pressure to points on the legs of these patients, produced vesiculation in about one-sixth of the time usually required. In each case, the condition had been present about nineteen years, and only in Mrs. M. H. was there slight scarring, about the chin.

DISCUSSION

DR. WILE: One sister says she has the eruption in the winter. There may be some relationship to hydroa estivale, which condition may tend to be familial.

DR. SHAFFER: These patients are sensitized to light, an example of Duke's physical allergy.

DR. PARKHURST: Could not that explain the cause of summer prurigo and hydroa estivale?

SCHAMBERG'S PROGRESSIVE PIGMENTARY DERMATOSIS. Presented by DR. PARKHURST.

Miss T. K., a dressmaker, aged 42, had had a peculiar pigmentation of the legs and ankles, especially their anterior surfaces, spreading gradually for one

year. There were numerous irregular groups of hemorrhagic punctae, interspersed with brown patches. There was one atrophic area, over the right internal malleolus. No edema was present.

DISCUSSION

DR. SHAFFER: This is the best example of Schamberg's disease that I have seen, for it presents less evidence of stasis than most cases. The picture is very clear-cut.

VON RECKLINGHAUSEN'S DISEASE. Presented by DR. PARKHURST.

Dr. Parkhurst presented five cases, two of them in brothers.

IDIOPATHIC MACULAR ATROPHY. Presented by DR. PARKHURST.

Miss E. P., a clerk, aged 32, had had the condition for fourteen months. At the nape of the neck there was a large coin sized patch of large pinhead sized, white, atrophic spots, closely crowded. There were smaller, similar patches at each side of the base of the neck: one on the left side, and two on the right. There were no follicular plugs, nor any apparently active lesions.

DISCUSSION

DR. WILE: The distribution is that of lichen planus atrophicus. Follicular plugs need not be present.

Book Reviews

FUNDAMENTALS OF DERMATOLOGY. By ALFRED SCHALEK, M.D., Professor of Dermatology, University of Nebraska, College of Medicine. Price, $3. Pp. 240, with fifty-four halftone illustrations. Philadelphia and New York: Lea & Febiger, 1926.

This small book of Schalek's is an outgrowth of his successful compend of dermatology. It is a rather formidable effort to undertake to give in a small volume the essentials of the principles of dermatology and of the various dermatoses. It requires a broad grasp of the subject as well as knowledge of the details, but it is an effort well worth while. We are in need of good books giving the essentials of the various large subjects in medicine; they are what students need and what practitioners need. They cover all of the facts of the working knowledge which any man uses in his profession.

Schalek has done well at this difficult task. In the first twenty pages he has given a good summary of the principles of dermatology. The reader who masters that can approach his cases intelligently and treat them intelligently. The remainder of the book is devoted to a consideration of the various dermatoses. The descriptions are brief, but clear and accurate. In short, this is a good book and the author is to be congratulated.

JAHRESBERICHT ÜBER HAUT-UND GESCHLECHTS-KRANKHEITEN SOWIE DEREN GRENZGEBIETE. ZUGLEICH BIBLIOGRAPHISCHES JAHRESREGISTER DES ZENTRALBLATTES FUR HAUT-UND GESCHLECHTSKRANKHEITEN ZOWIE DEREN GRENZGEBIETE. Volume 4. Edited by DR. O. SPRINZ for the year 1924. Pp. 686. Berlin: Julius Springer, 1926.

This is the fourth volume of this year book, just published, and it covers the literature for the year 1924. It has been favorably reviewed in the ARCHIVES before, and it is only necessary to call attention briefly to it again. It is a thorough bibliography not only of skin and venereal diseases but also of all borderline subjects. The volumes are of great use to any one who needs to be in possession of a complete recent dermatologic bibliography.

Index to Current Literature

DERMATOLOGY

Acne Vulgaris. E. H. Molesworth, M. J. Australia **2**:10 (July 3) 1926.

Acrodynia in Adults. Cleveland J. White, J. A. M. A. **87**:1092 (Oct. 2) 1926.

Action of Scarlet Fever Antitoxin. Mironesco and Farcas, Bull. Acad. de méd., Paris **96**:30 (July 6) 1926.

Advantages of West Cupping in Treatment of Furuncles and Carbuncles. Lauze, Bull. Soc. d. Sc. méd. **7**:277 (April) 1926.

Antivirus Filtrate in Treatment of Glanders. K. Svetkoff and A. Veller, Compt. rend. Soc. de biol. **94**:1191 (May 14) 1926.

Argentine Works on Dermatology and Syphilis in 1926. A. A. Fernández, Semana méd. **1**:1256 (June 10) 1926.

Atypical Cases of Yellow Fever in Salvador. H. Hanson, Am. Rev. Tuberc. **6**:261 (July) 1926.

Biology of the Skin. E. Edelstein and H. Vollmer, Ztschr. f. d. ges. exper. med. **50**:297 (May 25) 1926.

Biology of the Skin. R. Hauptfeld, Klin. Wchnschr. **5**:1184 (June 25) 1926.

Blood Chemistry in Leprosy. E. M. Paras, Philippine J. Sc. **30**:219 (June) 1926.

"Blood Injections in Erythrodermia." E. Schiff, Jahrb. f. Kinderh. **113**:96 (June) 1926.

Blood Vessels of Human Skin. T. Lewis, Brit. M. J. **2**:61 (July 10) 1926.

Burns Treated by Tannic Acid. C. S. Beck and J. H. Powers, Ann. Surg. **84**:19 (July) 1926.

Collosol Manganese in Furunculosis. M. L. Young, Brit. M. J. **2**:115 (July 17) 1926.

Concurrent Herpes Zoster and Varicella. A. C. Roxburgh and P. H. Martin, Brit. J. Dermat. **38**:286 (July) 1926.

Congenital Pemphigus Following Epidermic Cysts. Capurro, Arch. latino-am. de pediat. **20**:306 (May) 1926.

Contraindications to Vaccination. A. Groth, München. med. Wchnschr. **73**:1062 (June 26) 1926.

Control of Communicable Diseases Prevalent in Massachusetts. Mortality During Past Seventy-Fve Years. E. G. Huber, Boston M. & S. J. **195**:87 (July 8) 1926.

Convalescent's Blood in Measles and Chickenpox. Ducamp et al., Bull. Soc. d. Sc. méd. **7**:362 (May) 1926.

Degkwitz' Measles Serum. C. Noeggerath et al., Klin. Wchnschr. **5**:1168 (June 25) 1926.

Dermatitis Herpetiformis: Case. A. A. McDaniel, Mil. Surg. **58**:662 (June) 1926.

Diagnosis of Common Types of Skin Diseases. C. B. Wilmott, Kentucky M. J. **24**:268 (June) 1926.

Dick Test and Scarlet Fever Prevention. B. Vas, Klin. Wchnschr. **5**:1232 (July 2) 1926.

Digestion and Dermatosis. S. Ehrmann, Wien. klin. Wchnschr. **39**:756 (June 24) 1926.

Eczema in Infancy and Childhood. W. E. Sinclair, Florida M. A. J. **13**:1 (July) 1926.

Electrodesiccation and Electrocoagulation for Destroying Benign and Malignant Skin Lesions. E. K. Stratton, California & West. Med. **25**:192 (Aug.) 1926.

Endothermy and Combined Therapy in Dermatology. G. M. MacKee and J. J. Eller, Physical Therap. **44**:391 (July) 1926.

Erysipelas. J. Raimann, Monatschr. f. Kinderh. **32**:446 (June) 1926.

Erythroderma from Arsenical Treatment. E. Jeanselme et al., Ann. d. dermat. et syph. **7**:321 (June) 1926.

Etiology of Erythema Nodosum. E. Feer, Schweiz. med. Wchnschr. **56**:682 (July 17) 1926.

Etiology of Scarlet Fever. K. Kundratitz, Med. Klin. **22**:1105 (July 16) 1926.

Etiology of Granuloma Inguinale. J. A. McIntosh, J. A. M. A. **87**:996 (Sept. 25) 1926.

Exophthalmic Goiter, Myxedema and Scleroderma. Pasteur Vallery-Radot et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1149 (June 25) 1926.

Experience with Scarlet Fever Antitoxin. V. F. Huntley, J. Michigan M. Soc. **25**:388 (Aug.) 1926.

Experimental Scarlet Fever. I. W. Hach and Bordzilowskaja, Ztschr. f. Hyg. u. Infektionskrankh. **106**:232 (June 24) 1926.

Freckles and Univitelline Twins. E. Decking, München. med. Wchnschr. **73**:1188 (July 16) 1926.

Gangrene and Death Following Hypodermic Injection. M. M. Shaine, J. A. M. A. **87**:941 (Sept. 18) 1926.

Gangrene of Fingers Due to Subclavian Compression. A. K. Henry and A. Handousa, Brit. M. J. **2**:254 (Aug. 7) 1926.

Granuloma Inguinale. H. M. Purcell, Southwestern Med. **10**:309 (July) 1926.

Hansen's Bacillus in Leprosy Patches. A. Antunes, Brazil-med. **1**:285 (May 29) 1926.

Heating Screen in Skin Diseases. M. Allina, Monatschr. f. Kinderh. **32**:400 (June) 1926.

Hemolytic and Scarlet Fever Streptococci. L. V. de George, Prophylak. med. **5**:12 (Jan.) 1926.

Hemorrhagic Smallpox: Ten Cases. J. A. Weber and F. H. Douglass, Northwest Med. **25**:379 (July) 1926.

Histology of Cutis Marmorata. W. Scharpff, Deutsche Arch. f. klin. Med. **151**:275 (June) 1926.

Influence of Locally Injected Indian Ink Suspensions on Intracutaneous Response to Vaccinia and Other Viruses. J. C. G. Ledingham, J. Path. & Bact. **29**:309 (July) 1926.

Influence of Ultraviolet Rays on the Skin. S. Vail, Russk. Klin. **5**:720 (May) 1926.

Impetigo and Its Treatment. G. I. Meshtshersky, Venerol. i. Dermatol., Moscow, p. 229 (April) 1926.

Immunity in Neurotropic Ectodermoses. R. C. Bigliere, Rev. soc. argent. **2**:5 (April) 1926.

Leprosy in Fourteen Months Old Child. E. A. Neff, J. Trop. Med. **29**:146 (May 15) 1926.

Leprosy with Syphilis. G. Delamare and Achitouv, Presse méd. **34**:979 (Aug. 4) 1926.

Lupus Erythematosus with Acute Exacerbation; Erysipelas and Phlegmon Capitis Followed by Death. H. Sundt, Brit. J. Dermat. **38**:273 (July) 1926.

Measles Without Eruption. S. Cannata, Pediatria **34**:720 (July 1) 1926.

Method of Skin Scarification. E. B. Wood, J. Lab. & Clin. Med. **11**:993 (July) 1926.

Mild Epidemic of Jaundice in Louisiana. J. H. Musser and C. J. Miangolarra, New Orleans M. & S. J. **79**:114 (Aug.) 1926.

Multiple Anthrax Pustules. E. A. Molinelli, Semana méd. **1**:1207 (June 3) 1926.

Multiple Skin Cancers of Occupational Origin. W. J. O'Donovan, Lancet **2**:278 (Aug. 7) 1926.

Neurologic and Endocrinologic Aspects of Ichthyosis, Chronic Indurative Eczema and Minor Forms of So-Called Trophic Changes in Dermal Tissues. F. M. Pottenger, Endocrinology **10**:105 (March-April) 1926.

Oriental Sore Contracted at Marseilles. E. Jeanselme, Bull. Acad. de méd., Paris **96**:56 (July 13) 1926.

Outbreak of Smallpox. J. M. Lowrey, Florida M. A. J. **13**:9 (July) 1926.

Own Blood Transfusions in Eczema. Lintvareff and Hamburg, Venerol. i. Dermatol., Moscow, p. 240 (April) 1926.

Pathologic Changes in Scarlet Fever. N. Sysak, Arch. f. path. Anat. u. Physiol. **259**:647 (March 3) 1926.

Peripheral Sensory Paralysis. P. Matzdorff, Klin. Wchnschr. **5**:1187 (June 25) 1926.

Poisoning by Tobacco Applied to Skin. J. N. Deacon, Brit. M. J. **2**:61 (July 10) 1926.

Poisoning by Tobacco Applied to Skin. J. Ritchie, Brit. M. J. **2**:116 (July 17) 1926.

Pressure Bags for Skin Grafting. F. Smith, Surg. Gynec. Obst. **43**:99 (July) 1926.

Prevention of Irradiation Dermatitis. S. Rothman, Strahlentherapie **22**:729, 1926.

Prevention of Measles. E. Seligmann et al., Deutsche med. Wchnschr. **52**:1220 (July 16) 1926.

Prickly Heat. H. W. Acton, Indian M. Gaz. **61**:321 (July) 1926.

Primary Diphtheria of the Vulva. A. Versari, Pediatria **34**:723 (July 1) 1926.

Purpura with Wheal Formation. I. Werner, Med. klin. **22**:1001 (June 25) 1926.

Purpura Hemorrhagica Complicating Pregnancy: Mother and Child Affected. P. Liebling, Am. J. Obst. & Gynec. **11**:847 (June) 1926.

Radium Treatment of Carcinoma of Lip. J. Muir, Radiology 7:51 (July) 1926.

Reappearance of a Positive Dick Test. J. A. Toomey, J. A. M. A. **87**:941 (Sept. 18) 1926.

Relationship of Verruga Peruviana and Oroya Fever. Editorial, J. A. M. A. **87**:1039 (Sept. 25) 1926.

Sarcinae in Psoriasis. M. A. Marcus, J. Lab. & Clin. Med. **11**:967 (July) 1926.

Scarlet Fever Epidemic at Lawrence, Kan. N. P. Sherwood and V. M. Auchard, Kansas M. S. J. **26**:215 (July) 1926.

Scarlet Fever Immunization. J. Miller, Pub. Health J. **17**:345 (July) 1926.

Scarlet Fever Toxin. J. M. Miravent and E. Chiodi, Rev. soc. argent. **2**:42 (April) 1926.

Sclero-Edema in the New-Born. P. Woringer, Rev. franç. de pédiat. **2**:63 (April) 1926.

Sebaceous Glands in Human Nipple. O. C. Perkins and A. M. Miller, Am. J. Obst. & Gynec. **11**:789 (June) 1926.

Sepsis and Skin and Venereal Diseases. W. Scholtz, Deutsche med. Wchnschr. **52**:1215 (July 16) 1926.

Skin-Periosteal Flap for Radical Mastoid Operation. D. C. Smyth, Ann. Otol. Rhin. & Laryng. **35**:442 (June) 1926.

Skin Pigment and Ultraviolet Rays. A. C. Guillaume, Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1133 (June 25) 1926.

Skin Reaction to Adhesive Plasters. Seeliger, Klin. Wchnschr. **5**:1207 (June 25) 1926.

Skin Reactions from Emotions. C. Flandin, Bull. et mém. Soc. méd. de hôp. de Paris **50**:1264 (July 16) 1926.

Skin Test with Induced Pneumothorax. V. Ioffe, Russk. Klin. **5**:688 (May) 1926.

Skin Tests in Measles. Ruth Tunnicliff and Ruth E. Taylor, J. A. M. A. **87**:846 (Sept. 11) 1926.

Skin Tests for Susceptibility to Scarlet Fever. A. Baccichetti, Clin. pediat. **8**:361 (June) 1926.

Smallpox. E. L. Marsh, China M. J. **40**:613 (July) 1926.

Spirochetal Hemorrhagic Jaundice. A. H. van Gelder, Nederl. Tijdschr. v. Geneesk. **2**:524 (July 31) 1926.

Spirochetosis Icterohemorrhagica in Norfolk. F. W. Burton-Fanning and A. J. Cleveland, Brit. M. J. **2**:108 (July 17) 1926.

Statistical Study of Scarlet Fever. M. P. Isaminger, J. Michigan M. Soc. **25**:371 (Aug.) 1926.

Sulpharsphenamine in the Treatment of Warts. Richard L. Sutton, J. A. M. A. **87**:1127 (Oct. 2) 1926.

Survey of One Thousand Consecutive Dermatologic Cases. H. M. Bosman, South African M. Rec. **24**:266 (June 26) 1926.

Transfusion of Convalescent's Blood in Smallpox. Ducamp et al., Bull. Soc. d. Sc. méd. **7**:324 (May) 1926.

Treatment of Neurosyphilis. W. N. Hughes, Rhode Island M. J. **9**:126 (Aug.) 1926.

Treatment of Cutaneous Burns. F. W. Bancroft and C. S. Rogers, Ann. Surg. **84**:1 (July) 1926.

Treatment of Leprosy. R. M. Wilson, South. M. J. **19**:603 (Aug.) 1926.

Treatment of Pruritus Ani. K. C. Rice, Georgia M. A. J. **15**:257 (June) 1926.

Treatment of Purpura Hemorrhagica by Splenectomy: Case. W. S. Kerlin, New Orleans M. & S. J. **79**:58 (July) 1926.

Tuberculin Test in Measles. R. Debré and K. Papp, Ann. de méd. **19**:576 (June) 1926.

Typical Scurvy. E. H. Hermans and A. K. Horst, Nederl. Tijdschr. v. Geneesk. **2**:638 (Aug. 7) 1926.

Urticaria from the Sun's Rays. Pasteur Vallery-Radot et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1116 (June 25) 1926.

Use of Sodium Ricinoleate Toxin (Larson) in Immunization Against Scarlet Fever. R. G. Perkins and E. Megrail, Ohio State M. J. **22**:599 (July) 1926.

Vaccination Against Anthrax. K. Hruska, Seuchenbekämpfung, Vienna **3**:140, 1926.

Vaccination Scar as an Index of Immunity. J. P. Leake and Stanley Thomas, J. A. M. A. **87**:1125 (Oct. 2) 1926.

Vicarious Skin Tests in Diagnosis of Smallpox. H. A. Gins, Ztschr. f. Hyg. u. Infektionskrankh. **106**:213 (June 24) 1926.

Whole Blood from Convalescent Patient Used in Prophylaxis of Measles. J. Macnamara, M. J. Australia **2**:50 (July 10) 1926.

Zosteriform Chickenpox. R. Ziel, Med. Klin. **22**:991 (June 25) 1926.

SYPHILOLOGY

Abdominal Syphilis. H. Schlesinger, Supplement Wien. klin. Wchnschr. **39**: 1-11 (July 8) 1926.

Alcohol Serologic Test for Syphilis. O. Sciarra, Morgagni **68**:813 (June 27) 1926.

Arsphenamine and Neo-Arsphenamine Reactions: Side Effects and Their Managements. T. L. Li, Nat. M. J. China **12**:232 (June) 1926.

Asthma and Tuberculosis or Syphilis. V. Zerbino, Arch. latino-am. de pediat. **20**:283 (May) 1926.

Bismuth in Antisyphilitic Treatment. S. Ayres, Jr., California & West. Med. **25**:198 (Aug.) 1926.

Bismuth Therapy of Syphilis. N. G. Osipiants, Venerol i. Dermatol., Moscow, p. 219 (April) 1926.

Bismuth Treatment of Neurosyphilis. C. H. Tyau, Nat. M. J. China **12**:222 (June) 1926.

Calcium Chloride Plus Arsphenamine. Mönch, München. med. Wchnschr. **73**:1160 (July 9) 1926.

Comparative Research on Meinicke's Reaction. S. Mutermilch, Compt. rend. Soc. de biol. **94**:1331 (June 4) 1926.

Congenital Syphilis. H. Orel and H. Wimberger, Wien. klin. Wchnschr. **39**:808 (July 8) 1926.

Congenital Syphilis. H. Orel and H. Wimberger, Wien. klin. Wchnschr. **39**: 846 (July 15) 1926.

Cultural Methods for Increasing Number of Spirochaetae Pallidae in Fresh Syphilitic Tissue. L. W. Shaffer, Arch. Path. **2**:50 (July) 1926.

Cutaneous Manifestations of Acquired Syphilis. N. Tobias, J. Missouri M. A. **23**:287 (Aug.) 1926.

Degree of Mental Deficiency Resulting from Congenital Syphilis. N. A. Dayton, J. A. M. A. **87**:907 (Sept. 18) 1926.

Dercum's Method of Treating Neurosyphilis. D. L. Kerlin, New Orleans M. & S. J. **79**:123 (Aug.) 1926.

Early Diagnosis of Syphilitic Aortitis. J. Kopecky, Texas State J. Med. **22**:205 (July) 1926.

Endocrine Derangement in Congenital Syphilis. Récamier, Ann. d. mal. vén. **21**:421 (June) 1926.

General Paralysis Treated with Tryparsamide. G. B. Hassin and P. Bassoe, Arch. Neurol. & Psychiat. **16**:37 (July) 1926.

Globulins and Wassermann Reaction. E. Trenti, Policlinico **33**:1005 (July 19) 1926.

Hereditary Syphilitic Deafness Complicated with Bilateral Middle Ear Suppuration and Mastoiditis. G. W. Mackenzie, Ann. Otol. Rhin. & Laryng. **35**:483 (June) 1926.

Indications for Surgery in Syphilis. L. Thompson, South. M. J. **19**:615 (Aug.) 1926.

Individual Prevention of Syphilis. K. Heymann, Wien. klin. Wchnschr. **39**:847 (July 15) 1926.

Interstitial Syphilitic Keratitis. T. H. Manley, Jr., Atlantic M. J. **29**:700 (July) 1926.

Irreducible Serologic Reactions. H. Gougerot and E. Peyre, Ann. d. mal. vén. **21**:412 (June) 1926.

Kahn Precipitation Test. C. A. Palmerlee, New Orleans M. & S. J. **79**:113 (Aug.) 1926.

Kahn Test. W. W. Duemling, Indiana State M. A. J. **19**:272 (July 15) 1926.

Kidney Tumor with Congenital Syphilis. P. Rinaldi, Arch. ital. di urol. **2**:582 (May) 1926.

Late Syphilis of Joints. B. Grünzweig, Med. Klin. **22**:1109 (July 16) 1926.

Loss of Weight: Importance as Early Symptom in General Paralysis. H. A. Bunker, Jr., Arch. Neurol. & Psychiat. **16**:63 (July) 1926.

Malaria Treatment of General Paralysis. A. Pijper, South African M. Rec. **24**:292 (July 10) 1926.

Malignant Syphilis. I. S. Beirakh, Venerol. i. Dermatol., Moscow, p. 225 (April) 1926.

Meinicke Tests. G. Armuzzi, Pediatria **34**:770 (July 15) 1926.

Modern Aspects of Syphilis. C. B. Willmott, South. M. J. **19**:513 (July) 1926.

Modern Serology of Syphilis. E. Meinicke, Siglo méd. **78**:28 (July 10) 1926.

Phototherapy and Chemotherapy in Syphilis. S. Licciardi, Policlinico **33**:1017 (July 19) 1926.

Precipitin Test for Diagnosis of Syphilis. H. W. Butler, New Orleans M. & S. J. **79**:105 (Aug.) 1926.

Prognosis of Cardiovascular Syphilis. P. F. Stookey, J. Missouri M. A. **23**:292 (Aug.) 1926.

Prognosis in Rheumatic, Hypertensive and Syphilitic Heart Disease. E. F. Horine, Am. Heart J. **1**:617 (June) 1926.

Public Health Value of Kahn Precipitation Test: Yaws. E. V. Pineda and H. W. Wade, Philippine Islands M. A. J. **6**:183 (June) 1926.

Puriform Syphilitic Meningitis. P. Lechelle et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1160 (July 2) 1926.

Recurrens and Arsphenamine. J. Oettinger, Ztschr. f. klin. Med. **103**:546 (June) 1926.

Results of Wassermann Tests. H. K. Detweiler, Canad. M. A. J. **16**:800 (July) 1926.

Review of Literature on Syphilis. R. H. McBride, Am. J. Dis. Child. **32**:105 (July) 1926.

Sedimentation Test. G. H. Schneider, München. med. Wchnschr. **73**:1159 (July 9) 1926.

Serodiagnosis of Syphilis. O. Sciarra, Policlinico **33**:933 (July 5) 1926.

Serodiagnosis of Syphilis. O. Sciarra, Riforma med. **42**:533 (June 7) 1926.

Serologic Diagnosis of Neurosyphilis. H. F. Watson, Quart. J. Med. **19**:431 (July) 1926.

Single Virus in General Paralysis. G. C. Peracchia, Arch. f. Psychiat. **77**:494 (June 20) 1926.

Spirochetes in Umbilical Cord. E. Philipp and P. Gornick, Zentralbl. f. Gynak. **50**:1811 (July 10) 1926.

Study of Antigen Used in Wassermann Test for Syphilis. S. L. Leiboff, J. Lab. & Clin. Med. **11**:861 (June) 1926.

Superinfection with Syphilis. D. L. Voronoff, Ann. de mal. vén. **21**:401 (June) 1926.

Syphilis and Age. A. Bocchini, Pediatria **34**:689 (July 1) 1926.

Syphilis an Important Cause of Delayed Resolution in Acute Pain. T. Fitz-Hugh, Jr., and R. D. Anderson, J. M. Soc. New Jersey **23**:334 (July) 1926.

Syphilis: Oral Manifestations. W. B. Tatum, Ann. Otol. Rhin. & Laryng. **35**:572 (June) 1926.

Syphilis of Placenta in Negro. J. R. McCord, Am. J. Obst. & Gynec. **11**:850 (June) 1926.

Syphilis of the Prostate. T. Cohn, Ztschr. f. Urol. **20**:430, 1926.

Syphilis of Stomach. P. B. Mulligan, Radiology **7**:62 (July) 1926.

Syphilis of Stomach: Case. L. M. Blackford, Virginia M. Month. **53**:249 (July) 1926.

Syphilis in Twins. G. Castorina, Pediatria **34**:731 (July 1) 1926.

Syphilitic Aneurysm of the Aorta. Hudelo et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1285 (July 16) 1926.

Syphilitic Infection. W. Kolle and E. Evers, Deutsche med. Wchnschr. **52**:1075 (June 25) 1926.

Tabes Bandage. H. Watermann, Deutsche Arch. f. klin. Med. **151**:318 (June) 1926.

Tardy Congenital Tabes. H. Dufour et al., Bull. et mém. Soc. méd. d. hôp. de Paris **50**:1104 (June 25) 1926.

Therapeutics of Syphilis. H. Morrow, California & West. Med. **25**:55 (July) 1926.

Treatment of Early Syphilis. J. E. Moore and A. Keidel, Bull. Johns Hopkins Hosp. **39**:1 (July) 1926.

Treatment of Early Syphilis. II. Clinical Results. J. E. Moore and J. E. Kemp, Bull. Johns Hopkins Hosp. **39**:16 (July) 1926.

Treatment of Early Syphilis. III. Wassermann Reaction in Treated Cases. J. E. Moore and J. E. Kemp, Bull. Johns Hopkins Hosp. **39**:36 (July) 1926.

Treatment of General Paralysis. R. Schröter, Ztschr. f. d. ges. Neurol. u. Psychiat. **103**:133 (June 28) 1926.

Treatment of General Paralysis of Insane by Malaria. G. Bewley, Irish J. M. Sc. **6**:358 (Aug.) 1926.

Treatment of Neurosyphilis: Inoculation with Malaria. J. T. Nerancy, Illinois M. J. **49**:499 (June) 1926.

Treatment of Neurosyphilis with Tertian Malaria. D. E. Singleton and W. J. Riley, U. S. Vet. Bur. M. Bull. **2**:757 (Aug.) 1926.

Tuberculin Anergy in Syphilis. E. Tarantelli, Riforma med. **42**:530 (June 7) 1926.

Wassermann and Dold Tests. H. Dold and H. Gross, München. med. Wchnschr. **73**:1157 (July 9) 1926.

Wassermann-Fast Patient. U. J. Wile, Ann. Clin. Med. **4**:1026 (June) 1926.

Wassermann Test Performed with Chancre Fluid. M. Kitchévatz, Ann. de dermat. et syph. **7**:332 (June) 1926.